User manual and technical description

Multicare

Positionable bed for intensive care and integrated mattress replacement system OptiCare and Symbioso

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Positionable bed for intensive care

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1 Symbols

1.1 Warning Notices

1.1.1 Types of Warning Notices

Warning notices are differentiated by the type of danger using the following key words:

- **Caution** warns about the risk of material damage.
- **Warning** warns about the risk of physical injury.
- **Danger** warns about the risk of fatal injury.

1.1.2 Structure of Warning Notices

SIGNAL WORDS!

Type and source of danger!

➲ Measures to avoid the danger.

1.2 Instructions

Structure of instructions:

- Perform this step.

Results, if necessary.

1.3 Lists

Structure of bulleted lists:

- List level 1
  - List level 2

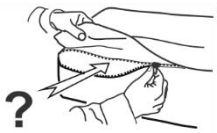
Structure of numbered lists:

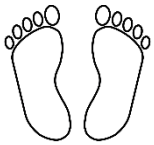
a. List level 1
b. List level 1
   1. List level 2
   2. List level 2

1.4 Symbols and Labels on the Product (Multicare)

	Thermal protection for transformer
	Possible risk
	Only suitable for indoor use
	Applied parts type B
	Safety isolating transformer, general
MET us E212434	MET Laboratories safety mark
	Jack for attachment of conductor for potential equalisation
= Kg	Safe working load
	Warning against crushing or trapping
	Read instructions for use.
	Use mattress recommended by manufacturer.
= Kg	Maximum weight of patient
= xxx kg	Weight of bed
≥40 kg + ≥146 cm + BMI ≥17	Designation of hospital bed for adults
Sanitized Protection	Antimicrobial surface finish

1.5 Symbols and Labels on the Product (OptiCare and Symbioso)

	Read instructions for use.
	2x T1AH anti-surge fuse (250 V, type 5x20 mm)
	Alternating current
	Activation GO button Device is connected to mains if green indicator is lit. Hold for 3 seconds to unlock panel controls.
	Applied parts type B
	Possible risk
	Do not iron!
	Do not use phenol!
	Do not wring!
	Regularly inspect the inside of the cover for contamination
	Machine wash at max. 71°C for 3 minutes
	Tumble dry on low heat setting (max. 60°C)
	Handwash with detergent. Initial temperature of hot water should not exceed 50°C

	Disinfect using solution containing less than 1000 ppm of Chlorine (refer to Instructions for use)
	Rinse with water
	Dry
	Cover materials are Fire resistant to BS7175, Source 0, 1 and 5
	Mattress Foot Part

1.6 Description of UDI labels

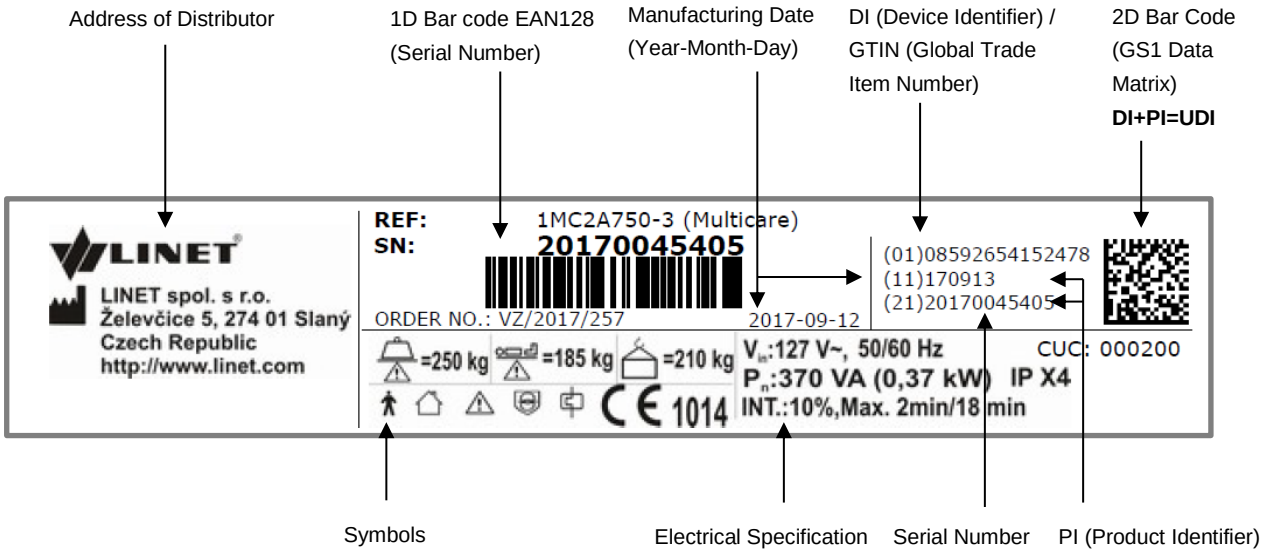


Fig. Serial Label with UDI (Multicare)

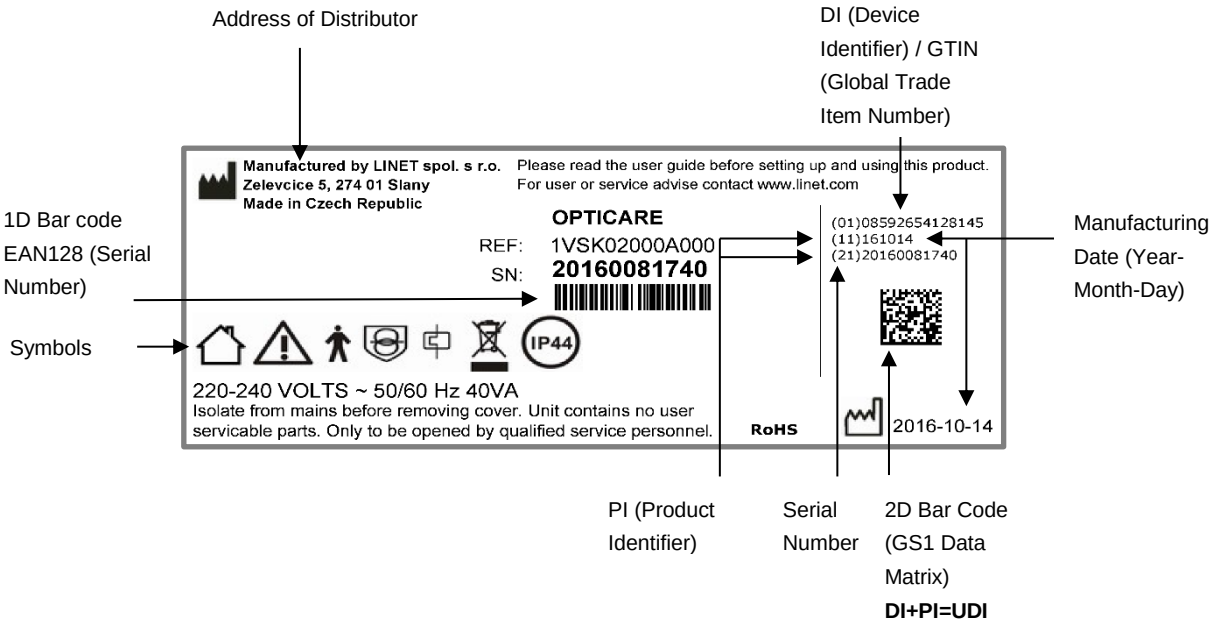


Fig. Serial Label with UDI (OptiCare - SCU)

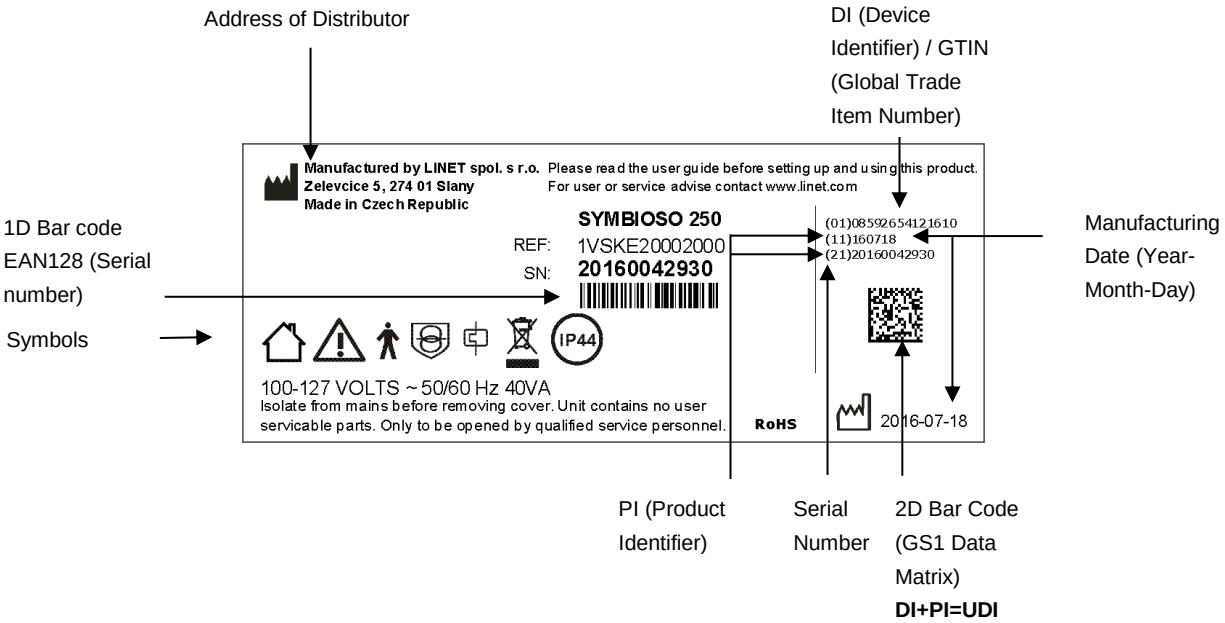


Fig. Serial Label with UDI (Symbioso - SCU)

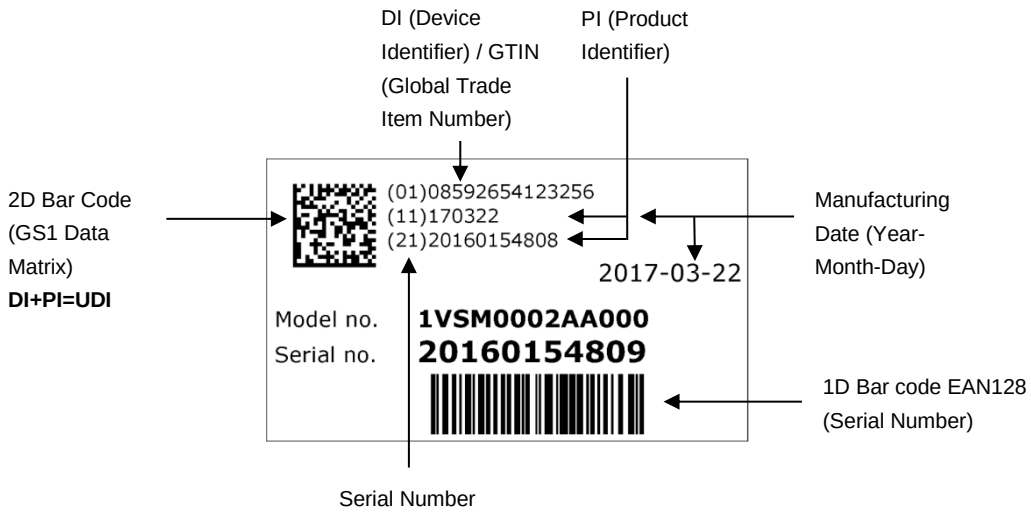


Fig. Serial Label with UDI (OptiCare - mattress)

1.7 Definitions

Basic Bed Configuration	the pricelist model configuration, not including a mattress
Bed Weight	The value depends on the product configuration, accessories or customer adjustments.
Clearance of Undercarriage	the height from the floor to the lowest point of the undercarriage between the castors, for the manipulation of accessories under a braked bed in the standard position
Duty Cycle	cycle of operation of the motor: time of activity/time of rest
Ergoframe	Ergoframe is the kinematic system of Mattress support platform Adjustment whose effect is the elimination of pressure on the patient´s abdomen and pelvic area and frictional forces on the patient‘s back and legs.
	Maximum Patient Weight depends on the application environment according to IEC 60601-2-52. For application environment 1 (intensive/critical care) and 2 (acute care) reduce Safe working Load by 65 kg. For application environment 3 (long-term care) and 5 (ambulatory care) reduce Safe working Load by 35 kg.
Safe Working Load	the highest allowable load on the bed (patient, mattress and accessories)
Siderail Height	the height of the upper crossbar or the edges of the siderails (not the highest point of the siderail controls) from the patient surface
Standard Bed Position	– The height of the patient surface with regard to the floor is 400 mm – The mattress support platform, including the individual parts, has to be in a horizontal (level - 0°) position. – The siderails are always locked in the upper position. – The basic position of the integrated extension.

1.8 Abbreviations

AC	Alternating Current
CE	European Conformity
CPR	Cardiopulmonary Resuscitation
dB	Sound Intensity Unit
DC	Direct Current
EMC	Electromagnetic Compatibility
FET	Field-effect transistor
HF	High Frequency
ICU	Intensive Care Unit
IV	Intravenous
LED	Light Emitting Diodes
ME	Medical Electrical (Equipment)
OFF	Deactivated
ON	Activated
SCU	System Control Unit
SWL	Safe Working Load
UDI	Unique Device Identification (for medical devices)
USB	Universal Serial Bus

2 Safety and Dangers

WARNING!

Multicare bed should be left in its lowest position when the patient is unattended in order to reduce risk of injury due to falls!

WARNING!

Siderails of Multicare should be located in the „up“ position to reduce the risk of the patient accidentally slipping or rolling off the mattress!

WARNING!

Incompatible siderails and mattresses can cause an entrapment hazard!

WARNING!

Inappropriate handling of the power supply cord e. g. by kinking, shearing or other mechanical damages is hazardous!

WARNING!

When routing cables from other equipment in the Multicare bed avoid squeezing those between parts of the Multicare bed!

WARNING!

Multicare bed should not be used with bed hoists and bed lifts!

WARNING!

To avoid risk of electric shock, this equipment must only be connected to a supply mains with protective earth.

WARNING!

During specific investigations or treatments the significant risks of reciprocal interference posed by ME equipment may occur.

WARNING!

No modification of this equipment is allowed.

WARNING!

The bed is intended for adults.
Follow chapter Intended use.

WARNING!

Incompatible mattresses can create hazards.

WARNING!

To avoid the risk of electric shock, this equipment must only be connected to a supply mains with protective earth.

WARNING!

No modification of this equipment is allowed.

WARNING!

Do not modify this equipment without authorization of the manufacturer.

WARNING!

If this equipment is modified, appropriate inspection and testing must be conducted to ensure continued safe use of the equipment.

WARNING!

An additional multiple socket-outlet or extension cord shall not be connected to the medical electrical system.

WARNING!

To avoid risk of electric shock, this equipment must only be connected to a supply mains with protective earth.

WARNING!

During specific investigations or treatments the significant risks of reciprocal interference posed by ME equipment may occur.

2.1 Safety Instructions

- Follow the instructions carefully.
- Use the bed exclusively if it is in perfect working order.
- If necessary, check the bed functions daily or at each shift change.
- Ensure any user has read and understood this manual completely before operating the product.
- Use the bed exclusively with the correct mains supply.
- Ensure that the bed is operated exclusively by qualified personnel.
- Ensure that the patient (health permitting) has been informed about the operation of the bed and all applicable safety instructions.
- Move the bed exclusively on even, hard-surfaced floors.
- Replace any damaged parts immediately with original spare parts.
- Ensure that maintenance and installation are performed exclusively by qualified personnel who have been trained by the manufacturer.
- To change fuses or cables contact servise organisation authorized by manufacturer.
- During peak loads or unavoidable excess loads (CPR), place mattress platform in the lowest position.
- Ensure that only one adult patient uses the bed at any time.
- Take care to avoid injuries or squeezing when operating moving parts.
- When using lifting poles or infusion stands, ensure that nothing will be damaged when you move or adjust the bed.
- Brake the castors when the bed is occupied.
- Keep the mattress platform in the lowest position at any time when the healthcare personnel are not treating the patient in order to prevent the patient from falling or injuries.
- Ensure that siderails are operated exclusively by healthcare personnel.
- Never use the bed in areas where there is a hazard of explosion.

- Enable or disable functions on patient controls using the Multiboard supervisor panel as appropriate for the patient's physical and mental state. Verify that the function is actually disabled.
- Never handle the mains plug with wet hands.
- Disconnect the product from the mains exclusively by pulling the mains plug. When pulling the mains plug, always hold the plug, not the cable.
- Position the mains cable so that there are no loops or kinks in the cable; protect the cable from mechanical wear and tear.
- Improper handling of mains cable can cause an electric shock hazard, other serious injuries or damage to the mattress replacement system.
- Ensure that the stipulated duty cycle (on-time) is not exceeded.
- Ensure that the moving parts of the bed are not blocked.
- To prevent failures, use exclusively the manufacturer's original accessories and mattresses.
- Ensure that the stipulated safe working load is not exceeded.
- If the patient's condition could lead to an entrapment, leave the mattress support platform in the flat position whilst unattended.
- When adjusting the ALT (automatic lateral therapy), ensure that the process does not pose any risk of the patient falling or getting injured, or of any lines or tracheal tubes getting pulled out.
- Adjust bed height to approx. 8 in. below maximum height when transporting the bed in order to facilitate overcoming possible obstacles.
- Do not exceed maximum load of 176.37 lbs for mattress platform extension.
- Ensure that the bed and its components are exclusively modified with the manufacturer´s approval.
- Use the mattress system exclusively as specified in this manual and in perfect working order.
- Use the mattress system exclusively with the correct mains supply (see Electrical Specifications (Symbioso)).
- Use the mattress system exclusively in its original state and do not modify it in any way.
- Have the mattress system used exclusively by or under supervision of trained and qualified nursing personnel.
- Have the mattress system serviced and installed exclusively by qualified personnel trained and authorised by the manufacturer.
- Do not exceed the maximum patient weight limit (see Mechanical Specifications (OptiCare or Symbioso)).
- Do not use the SCU near flammable gases (This does not apply to oxygen cylinders.).
- Never use the mattress replacement system near radiators or other heat sources.
- Never cover the SCU while in use.
- Select a suitable location for the placement of bed accessories and other objects to prevent involuntary activation of buttons or controls which may result in the adjustment of bed positioning.
- Do not use the bed in the event parts have been removed (e.g. parts of mattress platform) unless these parts are designed to be removed (e.g. head and/ or foot end of the bed).
- Never place any accessories or handset on the side rails in the area where the integrated side rail controller is located.
- After each emergency situation always check if any of the controllers (in side rails, hand set or ACP) is not involuntarily pressed by the bed accessories or by the mattress.
- The weighing system must be tested at regular intervals and in accordance with the metrological regulations of the relevant country. All testing and certification must be carried out by qualified personnel. The healthcare provider is responsible for ensuring the required testing frequency and testing procedure of the weighing system is carried out.
- To avoid injury or crushing, take extra caution when operating any moving parts of the bed.
- To avoid unintended activation of moving parts during any use of the bed always check that none of the control elements of the bed is not involuntary pressed by persons, mattress or other objects.

2.2 Use and Storage Conditions

⚠ DANGER!

Danger to life due to electric shock!

To ensure the bed's class I protection against electric shocks:

- ➲ Ground the mains.
- ➲ Use exclusively Hospital Grade or Hospital Only receptacles for grounding.

Multicare with OptiCare (or with Symbioso) are designed for use in rooms for medical purposes. Electrical installations must therefore meet local norms laying down the necessary conditions for electrical installations.

- Disconnect the bed from the mains in exceptional cases (i.e. lightning or earthquake).

Multicare, OptiCare and Symbioso are not suitable for indoor environments:

- containing flammable gases (except oxygen cylinders).

CAUTION!

Minimal clearance underneath the bed (standard version with 15 cm castors) is 4,4 cm!

- Observe the path for any obstacles and avoid collisions and possible damages of any bed´s part on the undercarriage.
- Do not use bed lifts and hoists for lifting the bed (bed hoists for patients are permitted; clearance for the patient hoists is 15 cm).

3 Standards and Regulations

3.1 Multicare

The bed complies with the following standards and directives:

- EN 60601-1:2006/A1:2013
- EN 60601-1-2:2007
- EN 60601-2-52:2010
- EN ISO 14971:2012
- EN 62079:2001
- 93/42/EEC
- 90/384/EEC
- 2011/65/EU
- UL 60601-1:2003

The manufacturer adheres to a certified quality management system in compliance with the following standards:

- EN ISO 9001
- EN ISO 14001
- EN ISO 13485

3.2 OptiCare

The mattress replacement system complies with the following requirements:

- EC directive 93/42/EEC for medical devices (Class 1 medical device)
- EN ISO 14001
- Directive 2002/95/EC (RoHS)
- Directive 2002/96/EC (WEEE)
- UL 60601:2003

3.3 OptiCare and Symbioso

The mattress replacement system complies with the following standards:

- EC directive 93/42/EEC for medical devices

The product complies with the requirements of:

- EN ISO 14001: 2015
- 2011/65/EU (RoHS)
- EN 60601-1:2006/A1:2013
- EN 60601-1-2:2007
- EN 60601-1-6:2010
- EN ISO 10993-5:2009
- EN ISO 10993-10:2013
- EN ISO 14971:2012

4 Functioning

4.1 Specifications of Use

Multicare is a positionable bed for intensive care. Its purpose is to support the patient and to facilitate treatment and manipulation of the patient by nursing personnel. OptiCare and Symbioso are integrated mattress replacement systems for use exclusively with Multicare hospital beds.

Multicare with OptiCare or Symbioso are suitable for:

- patients at moderate risk levels
- patients with any stage/category of pressure ulcer

in combination with other nursing interventions.

- Have Multicare and OptiCare or Symbioso used exclusively by or under supervision of trained and qualified nursing personnel.

Multicare with integrated mattress systems are suitable for:

- Patients
  - Standard bed:
    - With weight ≥ 40 kg
    - With height ≥ 146 cm
    - With BMI ≥ 17
  - Bed equipped with Junior Kit:
    - Older than 4 years with minimal height of 90 cm
  - Whose weight (including mattress and accessories) does not exceed the SWL
  - in long-term treatment (depending on bed type)
- Personnel
  - qualified medical staff
  - any person familiar with the manual
  - patient (condition permitting)
- Use
  - intensive/critical care units
  - hospital rooms
  - patient transport
- Transport
  - in original bag
- Medical purpose
  - active air mattress system (constant low pressure)
  - support for patients in Multicare beds
  - pressure ulcer prevention
  - for patients requiring skin Micro-Climate Management
- Location
  - The bed is determined for application environment 1 and 2 according to EN 60601-2-52:2010.

NOTE *For information concerning uses other than those outlined in the "Specifications of Use" section above, please contact Linet ®.*

4.2 Contraindications

The OptiCare mattress provides a patient surface that can automatically set and maintain its internal air pressure at an optimum level for maximum patient immersion and comfort.

The Symbioso mattress is a CLP (Constant Low Pressure) support surface for use in all health care settings to aid in pressure ulcer prevention.

The Micro-Climate Management (MCM) feature of the OptiCare and of the Symbioso mattress is designed to help manage the heat and humidity of a patient's skin in order to help prevent or assist in the treatment of tissue damage related to moisture on the skin. MCM is used in combination with the Constant Low Pressure (CLP) mode to help address factors contributing to skin breakdown. The MCM feature of the OptiCare and of the Symbioso is suitable for use with all patients in need of a constant low pressure mattress.

All air mattresses are contraindicated for patients with cervical traction or unstable:

- spinal fractures
- spinal cord injury
- fractures at risk of complication by a moving support surface
- trauma patients were spinal injuries have not been excluded or 'cleared'.

NOTE: *Where appropriate immobilization and fixation are in place to prevent the risk of complications from movement, the OptiCare and the Symbioso may be used once a risk assessment by a qualified person has been completed to ensure the appropriate support surface is used. Always follow facility protocol for spinal injuries.*

4.2.1 Skin Assessment

Before placing a patient on the OptiCare or the Symbioso mattress, a skin assessment by a qualified person should be completed to ensure the appropriate support surface is used. Always follow facility protocol for skin and risk assessments.

5 Scope of Delivery and Bed Variants

5.1 Delivery

- Upon receipt, check that the shipment is complete as specified on the delivery note.
- Notify the carrier and supplier of any deficiencies or damages immediately as well as in writing or make a note on the delivery note.

5.2 Scope of Delivery

- Multicare hospital bed
- Mattress with top cover specified in purchase order - Applied part type B (optional)
- SCU (System Control Unit) - Applied part type B (optional)
- User Manual

5.3 Multicare Variants

s = standard
o = optional

Optional bed features:

- Undercarriage
  - Standard undercarriage – under bed clearance under foot columns 44mm
  - Higher undercarriage – under bed clearance under foot columns 69mm
- OptiCare ready bed with SCU
  - with OptiCare
  - without OptiCare
- Symbioso
  - with Symbioso
  - without Symbioso
- Scales

- with scales (with bed exit alarm)
- sem balança (sem alarme de saída do paciente da cama)
- without scales (without bed exit alarm)

- Automatic Lateral Therapy (ALT)
  - with ALT
  - without ALT
- Castors
  - Tente Integral 150 mm (5.9 in.) double castors (s)
  - Tente Integral 150 mm (5.9 in.) single castors (o)
  - retractable fifth castor (o)
- Control Elements
  - Multiboard with LCD touchscreen in both head sections of the siderails (s)
  - Quick-Action panel in both head sections of the siderails (s)
  - additional supervisor panel (o)
  - handset with adapter for simple connection (Plug and Play) (o)
  - handset with illuminated buttons and adapter for simple connection Plug and Play) (o)
  - foot control for lateral tilt (o)
  - foot control for height adjustment (o)
  - patient control elements integrated in both middle sections of the siderails (s)
  - Version without integrated control elements for patients (o)
  - Integrated control elements without illumination (o)
  - Illuminated integrated control elements for patients (o)
- 1 pair of Mobi-Lift® handles (o)
- i-Brake® (o)
- x-ray cassette holder
- Additional adapter for lifting pole (o)
- LAN/Wi-fi module (o)
- EMR ready bed (o)
- Nurse call (o)
- i-Drive Power® (o)

6 Setup

6.1 Transport

For a safe transport, observe the following:

- Ensure that no cables are run over when moving a bed.
- Ensure that the mains cable is attached with a hook at the head end of the bed.
- Ensure that the castors are unlocked before moving the bed during the loading/unloading process (see Castor Control and Bed Transport).
- Move the bed exclusively on suitable floor surfaces.

Suitable surfaces:

- Tile
- Hard linoleum
- Poured flooring

Unsuitable surfaces:

- Too soft, unsealed or defective flooring
- Soft wooden flooring
- Soft and porous stone floors
- Carpeted floors with underlay
- Soft linoleum
  - For longer distances, ensure that the castor steering function (main control) is activated.
  - Ensure that the brakes are released while moving the bed.

6.2 Setup

Set up the bed as follows:

- Unpack the bed.
- Check the delivery (see Scope of Delivery and Bed Variants).
- Remove isolating foil from the mains control box (see Battery Activation).
- Install equipment and accessories (see Assembly).
- In case of delivery with dismantled bed ends, mount the head and foot ends (see Bed Ends).
- Set up the bed exclusively on a suitable floor surface (see Transport).
- Ensure that the mains cable does not collide or get stretched when adjusting the bed.

- Check that the plug is inserted correctly.
- Do not leave any extension cords or power strips loose on the floor.
- Ensure that all of the required mechanical and electrical prevention mechanisms are available on site.
- There is no mains switch on the bed, i.e. the mains cable is the only means to isolate the bed from the mains. Ensure that the mains cable is always accessible.
- Have the separable plug of the mains cable changed and maintained exclusively by qualified and trained service technicians authorised by the manufacturer.

7 Battery Activation

7.1 Control Section Placement

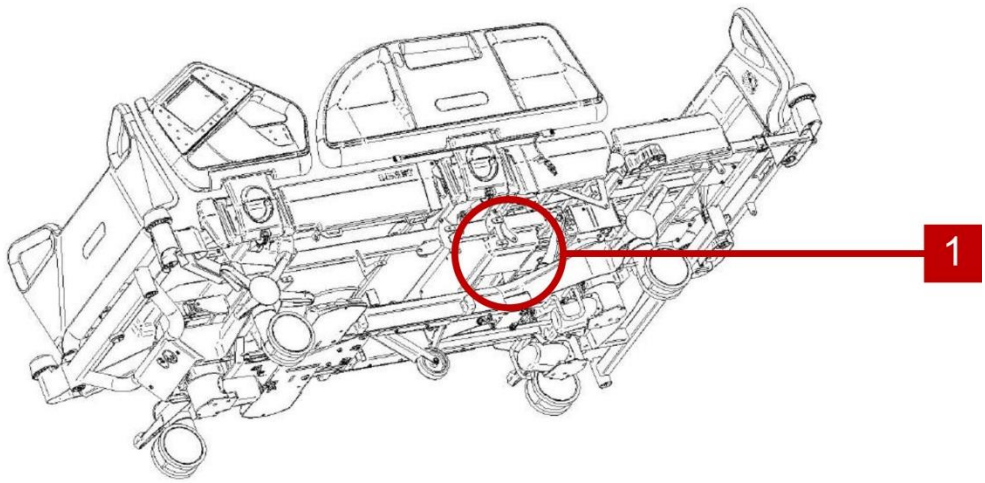


Fig. Control section placement

7.2 Removing the Isolating Foil

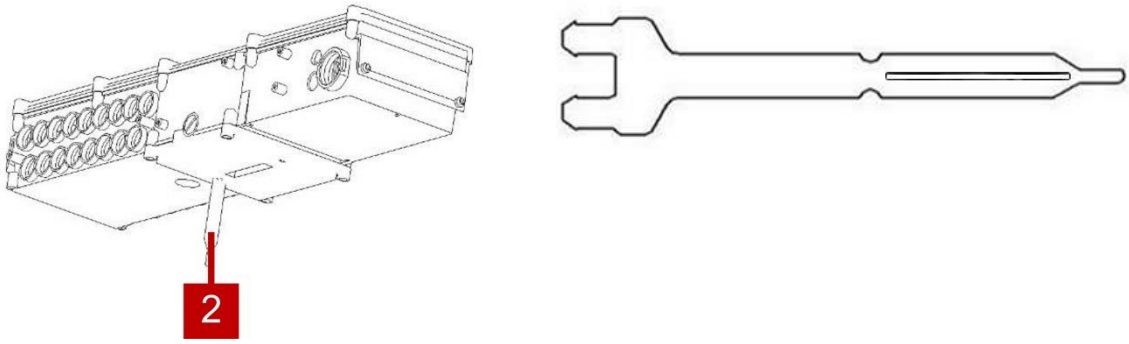


Fig. Isolating foil

To remove isolating foil:

- Remove isolating foil from mains control box **1** by pulling strap **2**.
- Check if isolating foil is complete and undamaged as shown in *Fig.* .
- If isolating foil is damaged, contact the manufacturer's service department immediately.

NOTE: *It is recommended to wear gloves when removing the isolating foil.*

8 Assembly

WARNING!

Risk of injury when working on the bed!

- ➲ Ensure that the bed is disconnected from the mains connection prior to assembly, disassembly and maintenance.
- ➲ Ensure that the castors are locked prior to assembly, disassembly and maintenance.

CAUTION!

Material damage due to incorrect assembly!

- ➲ Ensure that assembly is performed exclusively by seller´s customer service or trained hospital personnel.

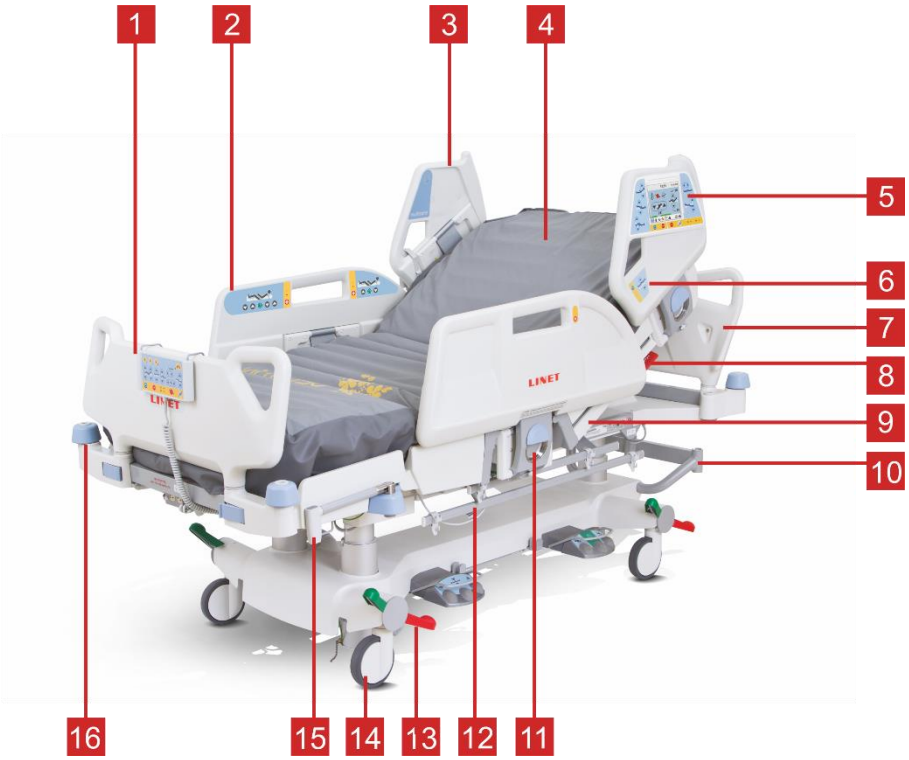


Fig. Overview of Multicare

1. Removable Foot Board with Safety Lock
2. Split Siderail – Middle Section with Integrated Control Panels for Patient
3. Split Siderail – Head Section
4. Four-part Mattress Platform with Ergoframe® System
5. Multiboard with LCD Touchscreen
6. Quick-Action Panel
7. Removable Head Board
8. CPR Control Lever – Backrest Release
9. X-Ray Cassette Holder
10. Accessory Holder
11. Siderail Release Lever
12. Bi-lateral Accessory Rail
13. Castor Control Lever
14. Castor Diameter 5.9 in. with Main Control Lever
15. Mobilift® Handles
16. Bumpers

NOTE *For safe, easy handling, Linet ® recommends having two technicians assemble the bed.*

8.1 Bed Ends

Dismount the bed ends as follows:

- Unlock sleeve fittings.
- Pull bed ends from sleeve fittings.
- Lock sleeve fittings.

Install the bed ends as follows:

- Unlock sleeve fittings.
- Slide bed ends into sleeve fittings.
- Lock sleeve fittings.

Fig. Locking the Bed Ends

8.2 Potential Equalisation

The bed is equipped with a standard protective connector. This connector is used for potential equalisation between the bed and any intravascular or intracardiac device connected to the patient to protect the patient from static electric shocks.

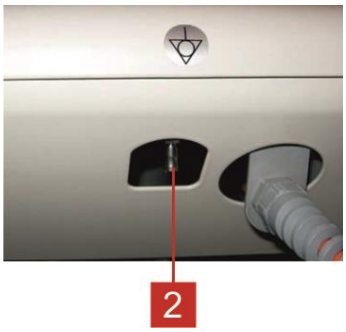


Fig. Potential Equalisation

1. Potential equalisation connector – female
2. Potential equalisation connector – male

Use equalisation connector if:

- the patient is connected to any intravascular or intracardiac device.

Before connecting the patient to an intravascular/intracardiac device:

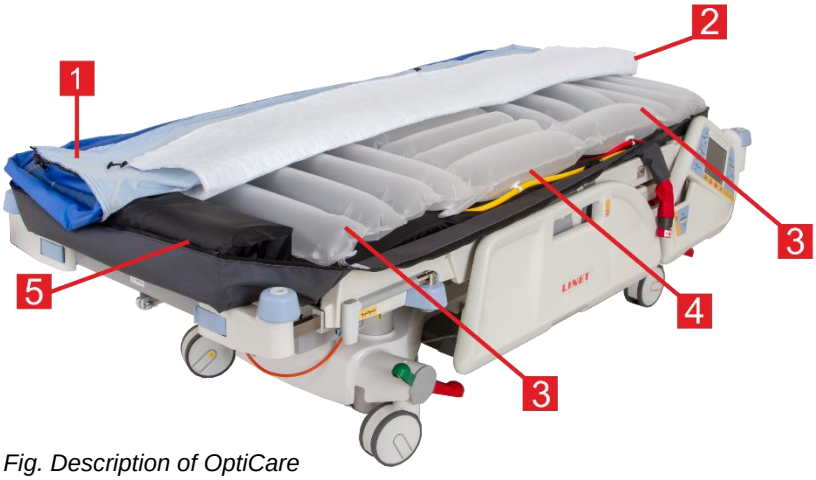
- Connect the ground wire of the device to the potential equalisation connector **2** on the bed on which the patient in question is lying.
- Use a standard hospital connector **1**.
- Make sure that the connectors match.
- Make sure that there is no possibility for inadvertent disconnection.

Before moving the bed:

- Disconnect the patient from the intravascular or intracardiac device.
- Disconnect the potential equalisation connector.

9 Mattress Description

9.1 OptiCare



1. Cover
2. Comfort layer
3. Air cell set (Area B)
4. Air cell set (Area A)
5. Heel section

Fig. Description of OptiCare

9.1.1 Mattress and Cover

The OptiCare mattress consists of 4 sections that are held together by 6 quick release fixation toggles. The 3 sections include cover, comfort layer, air cell set and foam base which supports the leg section and side formers. Within the central cut-out of the foam base is a 10 mm high density foam sheet to protect the patient if the mattress is deflated. Air cell set is divided into Area A and Area B. A two-part cover (**1**) made of water proof vapour permeable material encloses the mattress. Beneath the cover and on the top of the upper air layer is a removable polyester comfort layer (**2**). The 2 air layers consist of 10 separate air modules for easy and cost effective replacement in case of user damage. 7 of these air modules are connected together to form the Constant Low Pressure air mattress, while the other 3 act as air manifolds for the Micro-Climate Management (MCM) function. The mattress has a 7 degree heel slope to help further off-loading of pressure in the vulnerable heel area.

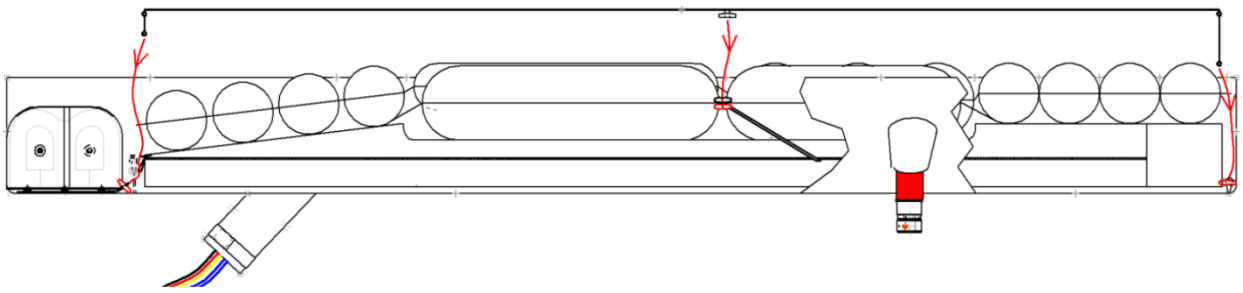


Fig. Position of fixation toggles (side view)

9.1.2 Bottom Deck

The bottom air layer is enclosed by a foam base fully contained within a removable waterproof cover. This provides support for the patient when entering or exiting the bed. The angled sides of the foam base are designed to fit securely into the shaped sides of the Multicare patient platform to prevent any movement of the mattress when the patient is getting into or out of the bed.

9.1.3 Cover

The top part of the cover consists of highly moisture- and vapour-permeable (MVP) two-way stretch material which forms an integral part of the Micro-Climate Management (MCM) function.

The cover top is equipped with a full 360-degree zip to allow easy removal for cleaning or replacement. The zip is covered by a waterproof flap to protect the mattress against fluid ingress.

Fig. Zip

The cover base is made from water-impermeable high-strength non-stretch material that is suitable for any demanding environment.

Additional quick-release straps prevent the mattress from shifting if the head or foot board is removed.

9.1.4 Heel section

The heel section is made up of 2 foam in air cells each with a custom designed internal foam shape that allows the 2 cells to collapse back into a reduced shape when pressed in by the foot board of the bedframe. This reduces the length of the mattress by 190 mm when compressed. The heel cells will self inflate when the bed is lengthened.

9.1.5 SCU (System Control Unit)

The SCU (System Control Unit) is installed under the leg section of the bed frame. It is possible to have the Multicare bed delivered with the SCU factory-fitted, or to have it retrofitted by approved service personnel.

Connection
Multicare is equipped with a dedicated power outlet for the SCU at the auxiliary power distribution point.

Control
The SCU is operated via the Multiboard touchscreen controls.

NOTE *There is no ON/OFF switch on SCU.*

Alarm system
The SCU is equipped with a comprehensive alarm system which detects any problems with the system performance.

The alarm system
- gives audible and visual alarms via the Multiboard if a problem requires immediate action.
- stores information for the service personnel to review later.

9.1.5.1 Replacing the mattress

When replacing the OptiCare mattress with an alternative active mattress from the Linet integrated systems, the system will automatically detect that type of mattress that has been connected and switch to the correct multiboard control screen. If replacing the OptiCare mattress with one that is not from the Linet integrated systems range then you will need to cancel the Mattress Not Connected alarm. See section 12.2.3 for how to log out the mattress.

9.2 Symbioso

9.2.1 Mattress and Cover (type B applied part)

The mattress consists of two decks that are connected with quick-release fixation toggles and polyurethane loops. A two-part waterproof and vapour-permeable cover fully encloses both mattress decks.

9.2.2 Top Deck

The top part consists of 7 separate air modules for easy and cost-effective replacement.

CLP (Constant Low Pressure):

- 5 modules form the active air mattress

MCM (Micro-Climate Management):

- 2 modules form the MCM manifolds

9.2.3 Bottom Deck

The bottom part consists of a medical-grade foam base which provides support for the patient if the air mattress is deflated. The foam base is 7,5 cm thick and completely enclosed in a waterproof cover.

The sides of the foam base fit the sides of the Multicare mattress platform to prevent the mattress from shifting when the patient is getting into or out of bed.

It is possible to remove the foam base for cleaning or replacement.

Torso/head cells:

- 7 cells
- side formers
- tubes for minimising air loss

Thigh/seat cells:

- 4 cells
- side formers
- tubes for minimising air loss

Calf/foot cells:

- 4 cells

Heel sore prevention cells:

- 4 cells

9.2.4 Cover

The top part of the cover consists of highly moisture- and vapour-permeable (MVP) two-way stretch material which forms an integral part of the Micro-Climate Management (MCM) function.

The cover top is equipped with a full 360-degree zip to allow easy removal for cleaning or replacement. The zip is covered by a waterproof flap to protect the mattress against fluid ingress.

The cover base is made from water-impermeable high-strength non-stretch material with that is suitable for any demanding environment.

Additional quick-release straps prevent the mattress from shifting if the head or foot board is removed.

9.2.5 SCU (System Control Unit)

The SCU (System Control Unit) is installed under the leg section of the bed frame. It is possible to have the Multicare bed delivered with the SCU factory-fitted, or to have it retrofitted by approved service personnel.

The SCU is equipped with 4 air connector sealing plugs.

- Connect sealing plugs to SCU air outlets to prevent any ingress of dirt or fluids.

Connection

Multicare is equipped with a dedicated power outlet at the auxiliary power distribution point.

- Connect SCU to power outlet using its integrated power cord.

Control

The SCU is operated via the Multiboard touchscreen controls.

NOTE *When removing the air mattress, it is sufficient to switch off the SCU using the ON/OFF switch on the side (see Transport Mode/Power Failure).*

Alarm system
The SCU is equipped with a comprehensive alarm system which detects any problems with the system performance.

The alarm system
- gives audible and visual alarms via the Multiboard if a problem requires immediate action.
- stores information for the service personnel to review later.

9.2.5.1 Replacing the mattress
When replacing the Symbioso mattress by a standard mattress, it is necessary to log out Symbioso.
- Press and hold mattress icon until vertical bar timer runs to 0 and mattress icon disappears.
- Remove Symbioso.
- Place standard mattress on bed.

10 Mattress Installation

The OptiCare mattress replacement system or Symbioso mattress replacement system replaces any mattress on the Multicare bed frame.

10.1 Installation of OptiCare

- Remove any existing mattress.
- Put mattress on bed frame with air pipes at foot end of the bed.
- Connect air pipes to SCU observing colour code. **Check SCU connectors before use!**
- Ensure that the CPR valves protruding through the red sleeves on either side of the mattress are fully closed as shown.

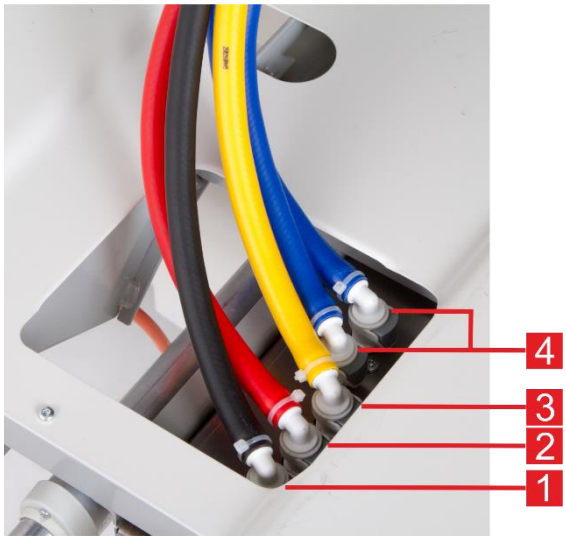


Fig.Air pipes in System Control Unit

Fig. Closed CPR valve

1. Area B connector - BLACK
2. Area A connector - RED
3. ODV connector (Optimization Detection valve) – YELLOW
4. MCM connectors - BLUE

10.1.1 Mattress Detection System (MDS)

Sensors in the System Control Unit (SCU) area A, B and ODV mattress air connectors detect that a valid air connector has been connected. When all three correct air connectors are detected, the SCU will enter Standby mode. In Standby mode mattress areas A and B are inflated to a static pressure ready for a patient to be placed onto the mattress and Optimization to start.

10.1.2 Safety Straps

The sides of the foam base fit the sides of the Multicare mattress platform to prevent the mattress from shifting when the patient is getting into or out of bed.

Furthermore, the mattress is equipped with additional quick-release straps to prevent the mattress from shifting if the head or foot board is removed. These straps are located on headend and footend of the bed.

10.1.3 Transport Handles

WARNING!

Material damage and risk of injury due to incorrect use!

➲ Transport the mattress using transport handles without patient on it!

Transport handles (2) are intended for transport of the mattress.

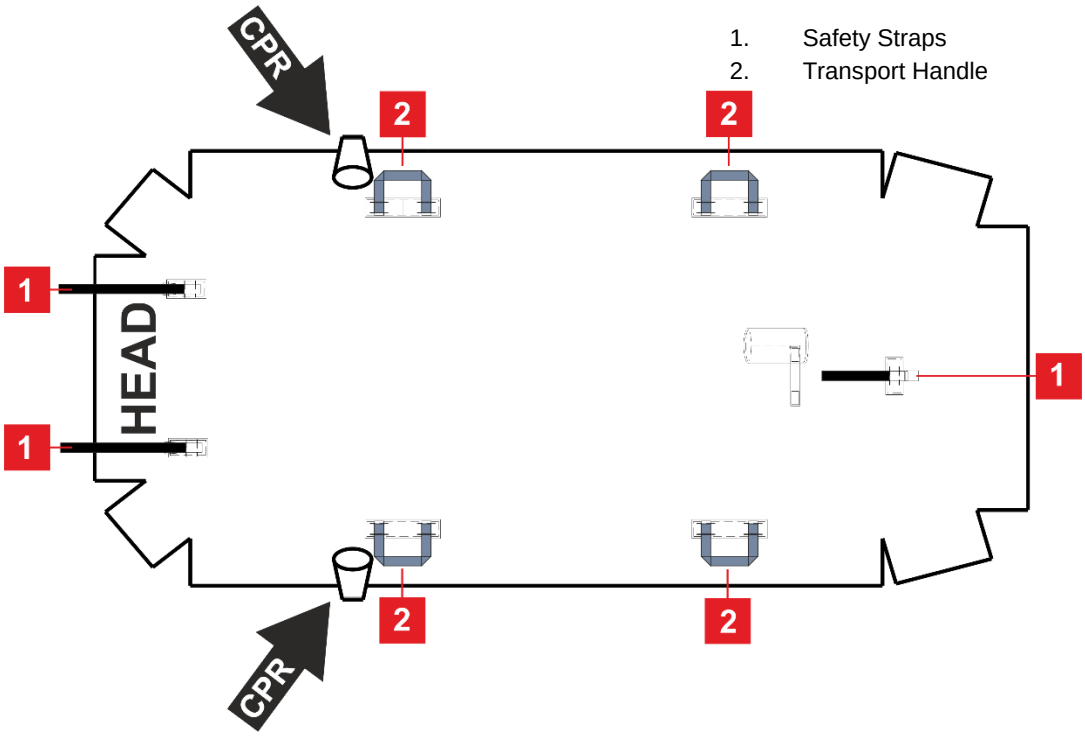


Fig. Base Cover Description

10.2 Installation of Symbioso

Fig. Colour-coded Air Pipes

Fig. CPR Strip

- Remove any existing mattress.
- Put mattress on bed frame with air pipes at foot end of bed.
- Disconnect the four sealing plugs.
- Connect air pipes to SCU observing colour code. **Check SCU connectors before use!**
- Make sure that the red CPR strips on both sides of the head end of the mattress are not left open but connected, and showing correctly through the slots in the cover.
- Switch on SCU using illuminated power switch **1** at back of SCU box.

Fig. Power Switch

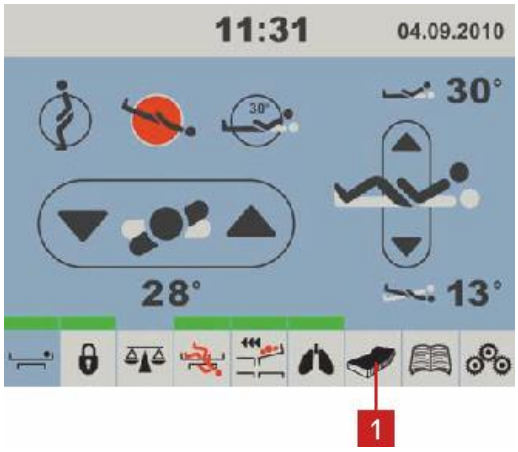
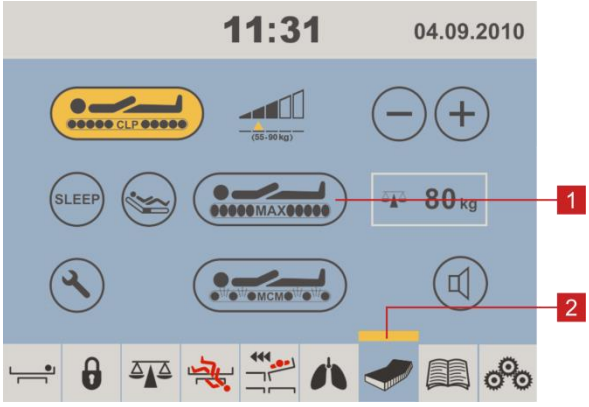


Fig. Selection Button

Selection button **1** for mattress menu appears in bottom menu bar on touchscreen.

If button does not appear:
- Select another menu screen.
- Mattress starts to inflate in Max Inflate Mode.



During the inflation process:

- Air cells on button Max Inflate **1** will alternate between black and white.

When the mattress is completely inflated:

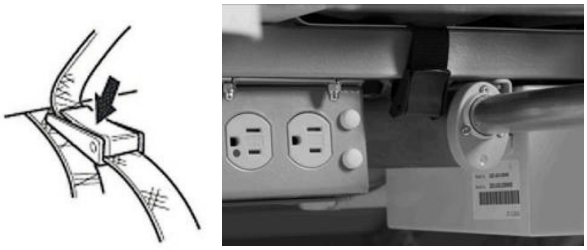
- Air cells on button Max Inflate **1** remain black.
- Mattress pressure indicator strip **2** turns green.

Fig. Max Inflate Mode

10.2.1 Safety Straps

The sides of the foam base fit the sides of the Multicare mattress platform to prevent the mattress from shifting when the patient is getting into or out of bed.

Furthermore, the mattress is equipped with an additional quick-release straps to prevent the mattress from shifting if the head or foot board is removed. These straps are located next to the air pipe outlet on the mattress cover base and at the head end of the mattress.



To fix the strap:

❖ Loop black strap around metal bed frame and feed it back through the plastic clip.

To release the strap:

❖ Pull loose end of strap upward to release clip.

Fig. Safety Strap

10.3 Installation of SCU (System Control Unit)

⚠ CAUTION!

Material damage due to incorrect installation of SCU!

➲ If the SCU does not come factory-fitted, have it installed by a service engineer authorized by Linet ®.

11 Operation (Multicare)

CAUTION!

Material damage due to temperature difference!

➲ If there is a considerable temperature difference between the bed and the place of operation (after transport/storage), leave bed unconnected for 24 for the difference to balance itself.

11.1 Initial Operation

Prepare the bed for service as follows:

- Connect the bed to the mains.
- Charge the battery.
- Raise and tilt the mattress platform to the highest position.
- Lower and tilt the mattress platform to the lowest position.
- Check that the castors as well as main brake work correctly.
- Check that the bed extension works correctly.
- Check that it is possible to remove the head and foot boards.
- Check all of the functions on the control elements (Multiboard etc.).
- Check that the siderails function properly.
- Dispose of all packaging (see Disposal).

11.2 Battery Operation

For declared lifetime period of leaded accumulators is recommended during storage:

1) To prevent accumulators from deep discharging (state-of-charge under 70%) and to keep accumulators at least partly charged by regular recharging
2) To store accumulators on dry and cold places (from 10°C to 0°C)
3) To prevent accumulators from being in the sunshine

The battery supplied with the bed is delivered uncharged. The battery serves as a backup during power failures or while transporting the patient.

NOTE *Batteries will remain in fully functional condition only for a certain period of time which is dictated by the laws of physics and chemistry used in this type of Dry Lead Acid battery technology and their frequency and method of use.*

- The user is obliged to monitor battery functionality and to change the batteries in accordance with the user & service manuals.
- Batteries must be checked according to the user manual at least once per month.
- Use exclusively batteries approved by the manufacturer.

NOTE *The service life of the batteries depends on the frequency and method of use.*

The manufacturer takes no responsibility for any damage to the bed or the battery caused by:

- Not following manufacturers user manual instructions
- Fitting batteries which are not approved by Linet
- Batteries fitted by an unqualified service organization.

NOTE *The manufacturer provides a 6-month warranty for the full function of the batteries.*

To charge the battery:

- Connect the bed to the mains.

NOTE *Some bed adjustment options are not available without a battery, for example, height adjustment under a load of above 200 kg.*

The LED indicates the battery's charge status:

Yellow LED	Battery charge status
Not lit	Battery capacity is sufficient (charging completed)
Short flashing (shortly lit, longer not lit) (circa 1.8 sec.)	Battery is charging - continue charging until the LED is extinguished. In emergency cases, the battery can be used as a backup power source for a short period. If LED is still flashing after 12 hours of charging or stops flashing, but you can not position with bed, battery is defective or broken. Contact manufacturer.
Long flashing (longer lit, shortly not lit) (circa 0.2 sec.)	Low battery voltage - battery can not be used as a backup power supply even for a short period; battery is completely discharged or defective (if this type of signalisation persists, it is necessary to replace the battery - service action)
Lit continuously for several hours (circa 10 hours), when bed is connected to the mains.	Battery absence or failure condition (battery is connected incorrectly, line between the power supply and battery is broken or battery fuses are faulty); contact service department of the manufacturer in case of such signalisation.

11.2.1 Replacing the battery

CAUTION!

Damage to the bed due to incorrect battery replacement!

- Have the battery replaced exclusively by qualified personnel.
- Exclusively use batteries approved by the manufacturer.

CAUTION!

Material damage due to overheating!

If the battery is faulty, degassing may occur. In rare cases this might cause deformations of the battery case, control panel housing or cable.

- Stop using the bed immediately (see Removing the Bed from Service).
- Inform the manufacturer's service department.

CAUTION!

Risk of reducing battery durability due to incorrect use!

- Use bed on battery only in crisis situations (e.g.: power blackout, patient compli- cations during transport, etc.)
- After reconnecting bed to the mains charge battery to full capacity (see chart Bat- tery charge status).

- Battery must be replaced with new battery approved by the manufacturer.
- The manufacturer recommends to replace the battery by qualified service organization after 2 (two) years of use. After this period the supposed service life of battery ends and the manufacturer cannot guarantee the battery service life after this period.
- The battery must be replaced with the new battery approved by manufacturer after maximum 5 (five) years of use at the latest.
- Bed must only be fitted with batteries approved by the manufacturer. To get more information on how to change battery please refer to the Service manual (contact service department of the manufacturer).

Status "Faulty battery"

The battery is regarded as faulty if at least one of the following conditions applies:

- Battery charging constantly
- Low voltage on battery
- Low charging current of battery

- This status is indicated by the battery status indicator being constantly lit.
- These statuses are summarised to Linis and written to Blackbox.

To cancel this status:

- Press STOP button.

Status “Discharged battery”

The battery is regarded as discharged if the following condition is met:
- Defined decrease of voltage depending on discharging current
- This status is indicated by the battery status indicator flashing quickly.
- The electric CPR position is the only possible position.
- This status will be cancelled automatically when the bed switches to sleep mode.

To cancel this status:
- Press STOP button.

11.3 Removing the Bed from Service

Remove the bed from service as follows:
- Disconnect the bed from the mains.
- Disconnect the ground wire.
- Deactivate the battery.
- Remove accessories.

To prevent damage during storage:
- Pack or cover the bed and accessories.
- Ensure that storage conditions are the same as the operating conditions.

11.3.1 Deactivating the Battery

To avoid damaging the bed and the environment during storage:
- Deactivate the battery on the supervisor panel.

To deactivate the battery on the supervisor:
- Disconnect the bed from the mains.
- Disconnect the ground wire.
- Activate the keypad by pressing the GO button on the supervisor.
- Press the Thigh Rest Up + Thigh Rest Down + Trendelenburg Position buttons at the same time and hold them for three seconds.

The battery is deactivated.

12 Control System (Multicare)

WARNING!

Risk of injury when adjusting the bed!
- Ensure that there are no body parts between the mattress platform elements and the mattress platform frame when adjusting the bed.
- Ensure that there are no body parts below the mattress platform frame before adjusting the bed.
- Secure or remove any items on the bed.

The bed is operated by different control elements.

Control elements depending on the model:
- Multiboard with LCD touchscreen in both head sections of the siderails
- Quick-Action panel in both head sections of the siderails
- Additional supervisor
- Handset
- Handset with adapter for easy connection (Plug and Play)
- Handset with illuminated buttons
- Foot control for lateral tilt

- Foot control for height adjustment
- Patient control elements integrated in both middle sections of the siderails

Disabling individual functions on the Multiboard will affect all control elements.

If the bed does not react to individual position settings:

- Check whether the function is disabled on the supervisor panel.

12.1 Multiboard with LCD Touchscreen in Both Head Sections of the Siderails

The Multiboard is the main control element. It is integrated in the outside of both head sections of the siderails.

- Ensure that exclusively nursing staff trained for critical care operate the Multiboard.

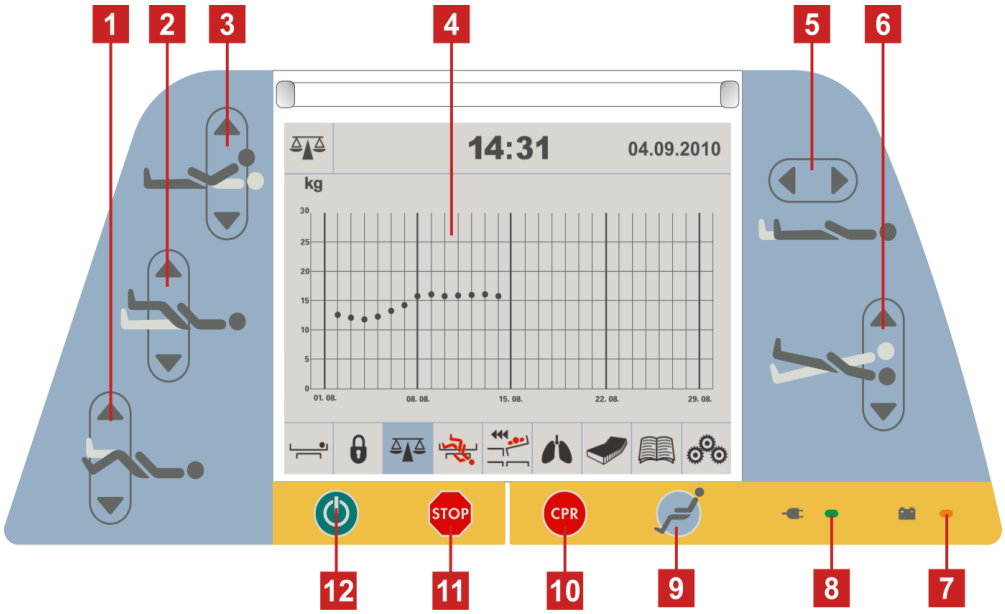


Fig. Multiboard

1. Calf Rest Position Buttons
2. Thigh Rest Adjustment Button
3. Backrest Adjustment Button
4. LCD Touchscreen
5. Buttons Mattress Platform Extension
6. Buttons Longitudinal Tilt Adjustment
7. LED Battery Charge Status
8. LED Mains Power
9. Button Cardiac Chair Position
10. Button CPR (Resuscitation) Position
11. Central STOP Button
12. GO Button

12.1.1 Central STOP Button

The central STOP button immediately interrupts all bed movements in case of unauthorized bed positioning or an electronic failure.

Pressing the central STOP button for at least 0.3 seconds immediately stops all electronic bed movements.

12.1.2 Activating GO Button

The GO button activates the keypad or the touchscreens of all control elements.

A GO button is included on a number of different control elements. The function of the GO button is identical on all control elements.
Pressing a function button will keep the keypad active for another 3 minutes.

During this time the following is possible:

- Adjusting individual mattress platform elements by pressing the corresponding function buttons.
- Disabling individual functions with the lock buttons.

Each time a function button is pressed, the keypad will remain active for another 3 minutes.

12.1.3 Function Buttons

The function buttons **1**, **2**, **3**, **5** and **6** adjust the position of the backrest, thigh rest and calf rest as well as the tilting and extending of the mattress platform. The buttons **9** and **10** allow adjusting the CPR and Cardiac Chair memory functions.

Button CPR (Resuscitation) Position

If the bed is equipped with OptiCare or Symbioso mattress, pressing button **10** will also deflate the mattress.

NOTE *After 60 minutes of CPR an OptiCare mattress will automatically re-inflate and go back to previous mode of operation.*

NOTE *Pressing two function buttons at the same time will be recognized as an error by the controller. The controller will interrupt immediately all bed movements immediately.*

Set the position as follows:

- Activate the keypad by pressing the GO button.
- Press and hold function button until desired position is reached.

12.1.4 Mains power LED

Status	Meaning
lit LED	connected to the mains
unlit LED	disconnected from the mains
flashing LED	system error

12.2 LCD Touchscreen

The LCD touchscreen is a part of the Multiboard integrated in the side rail.

Depending on the current function, the LCD touchscreen shows different screens. Every screen will display a status bar in the top and a menu bar in the bottom. The status bar shows date and time. The menu bar allows selecting other screens.
Light green lines above individual icons in the menu bar indicate the active functions in the respective screens.

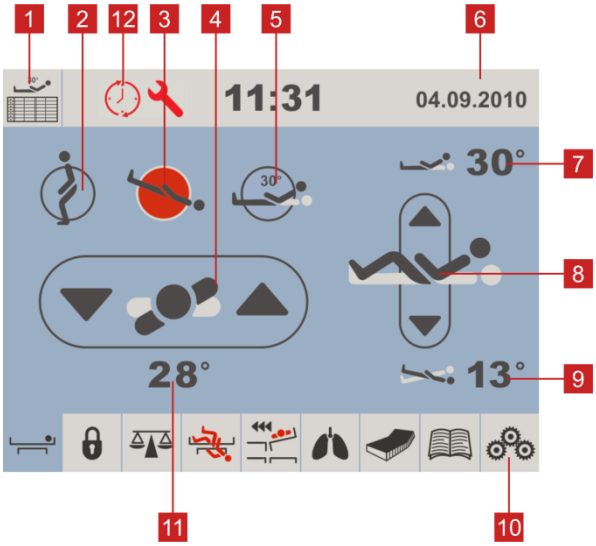
12.2.1 Screen Positions

WARNING!

Risk of injury or patient falling out of bed due to lateral tilt!

- Ensure that siderails on the respective side are folded up.
- Ensure that the patient will not fall out of the bed.

Screen Positions allows setting certain special positions of the bed and indicates the tilt angle. Bed positioning which depends on columns is continuous.



1. HOB (Head of Bed) History
2. Icon Mobilisation Position
3. Icon Trendelenburg Position
4. Icon Lateral Tilt
5. Icon Backrest 30°
6. Status Bar
7. Backrest Tilt Angle Indicator
8. Icon Autocontour
9. Longitudinal Tilt Angle Indicator
10. Menu Bar
11. Lateral Tilt Angle Indicator
12. Service period notification

Fig. Screen Positions

Setting positions:

- Activate touchscreen by pressing GO button.
- Press and hold respective icon until desired position is reached.

The respective indicator indicates the tilt angle or the backrest angle

NOTE *Selecting the lateral tilt is exclusively possible if the siderail on the respective side is folded up.*

Possible positions:

- Lateral Tilt
  - Allows optimizing the pulmonary function.
  - Prevents decubitus.
  - Tilting the mattress platform to the left or the right.
- Autocontour
  - Raising or lowering the backrest and thigh rest.
- Mobilization position
  - Makes it easier for the patient to get out of the bed.
  - Backrest upright
  - Mattress platform in lowest position
- Trendelenburg position
  - Provides anti-shock conditions for the patient.
- Backrest 30°
  - Provides optimum conditions for easier patient ventilation.

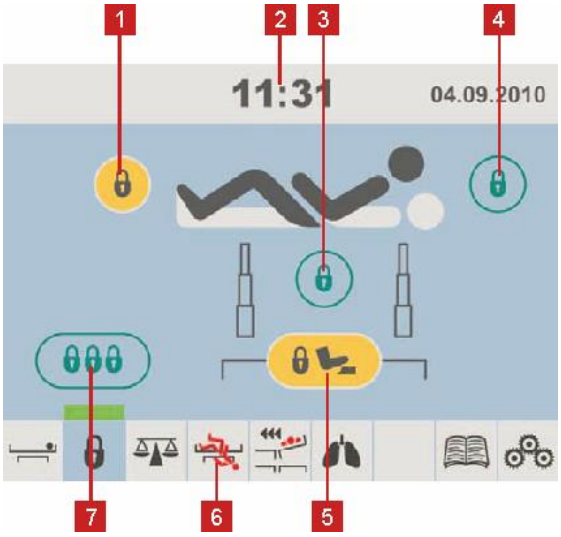
NOTE *During continuous positioning Backrest stops automatically in 30 and 45 degrees. To continue in positioning press corresponding button once more.*

Service period notification:

Blinking symbols “Clock & Wrench” in the top left corner means that recommended period for safety checks has been exceeded. Call your service and plan your next safety check.

12.2.2 Screen Function Lock

Function lock allows locking all or individual functions.



1. Thigh Rest Lock
2. Status Bar
3. Height and Tilt Lock
4. Backrest Lock
5. Icon Foot Control Lock
6. Menu Bar
7. Central Lock

Fig. Screen Function Lock

Locking individual functions:

- Activate touchscreen by pressing GO button.
- Press icon or icons of functions to lock.

Selected functions are locked. Icons of locked functions are highlighted in yellow.
A light green line appears above the Function Lock icon in the Menu Bar.

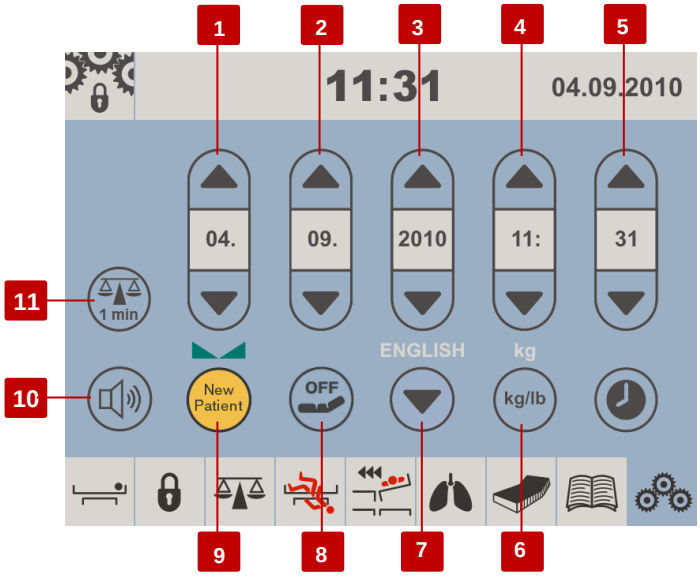
Locking all functions:

- Activate touchscreen by pressing GO button.
- Press icon **7**.

All functions are locked.

12.2.3 Screen Settings

Screen Settings allows setting the following parameters:



- Date (DD.MM)
- Year (YYYY)
- Time (HH:MM)
- Language
- Weight unit (lb/kg)
- New patient

1. Icon Date - Day
2. Icon Date - Month
3. Icon Year
4. Icon Time - Hours
5. Icon Time - Minutes
6. Icon Weight Unit
7. Icon Language
8. Mattress OFF Icon
9. Icon Total Reset
10. Icon “Beep after pressing LCD screen”
11. Weight Value Hidding

Fig. *Screen Settings*

Setting date, year or time:

- Press corresponding icon.

Setting language:

- Press icon **7** repeatedly until desired language is displayed.

Setting weight unit:

- Press icon **6** repeatedly until desired weight unit is displayed.

New patient:
It is recommended to use „New Patient“function when replacing patients. The NEW PATIENT function is enabled when the bed is loaded with at least 30 kg.

Button performs following functions:

- Weight taring (only if the weights are stabilized)
- Deletes history of weighting
- Deletes history of ALT
- Deletes history of 30°/45° backrest tilt
- Sets CLP to level 2
- Turns ON MCM
- Turns ON Fowler Boost function
- Turns OFF sleep mode

Use the function as follows:

- Wait until the weights are stabilized.
- Press and hold icon **8** until the yellow statusbar drops.
- The Scales display is shown on LCD.

Weight have been tared, history deleted and it is possible to place new patient on the bed.

After changing time or date:
The pop-up below will appear asking if you want to save the changes (e.g. after changing dates etc.).

Fig. Screen Function Lock

To confirm changes:
- Press green tick.

To deny changes:
- Press red cross.

Logging out the OptiCare:
When replacing the OptiCare mattress by a mattress that is not part of the Linet OptiCare integrated mattress range, it is necessary to log out OptiCare.

- Press and hold **OFF Mattress icon**.
- Cancel the Mattress Not Connected alarm.

Logging out the Symbioso:
When replacing the Symbioso mattress by an alternative mattress, it is necessary to log out Symbioso.

- Press and hold mattress icon until vertical bar timer runs to zero and mattress icon disappears.

NOTE *Logging out an OptiCare mattress or a Symbioso mattress to use a standard mattress instead will disable the Manual CPR pop-up menu.*

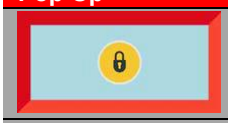
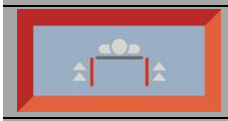
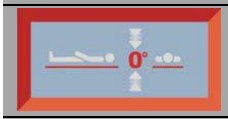
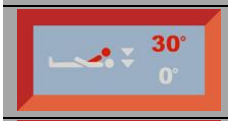
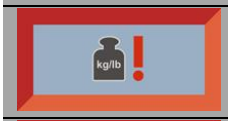
12.2.4 Screen Manual

Screen Manual shows short version of user manual.
Screen Manual is available in Czech, English, Italian, French, Spanish, Swedish, Dutch, Brazilian Portuguese, Finnish, Danish and German.

To enter Screen Manual:

- Press icon  on the LCD screen.

12.2.5 Pop-Ups

Pop-Up	Meaning	Action required
	Function locked	❖ Activate function by unlocking respective lock.
	X-ray cassette holder not inserted correctly	❖ Insert x-ray cassette holder correctly.
	Activation required	❖ Press GO button to activate keypad or touchscreen.
	Siderails folded down - lateral tilt disabled	❖ Fold up side rails to enable adjustment of lateral tilt.
	Prevention of collision of floor and bed in tilted position	❖ Shorten mattress platform. -or- ❖ Lower calf rest.
	Horizontal position reached during tilting of bed	❖ Press respective button or icon to continue tilting.
	Lateral tilt adjustment by foot control - max. 15°	No action required - information only.
	Backrest angle adjusted above 30° - lateral tilt limited to 15°	❖ Lower backrest to an angle of less than 30° to adjust lateral tilt to an angle of more than 15°.
	Maximum load of 551.16 lbs exceeded	❖ Remove weight.
	Bed loaded with more than 330.69 lbs lateral tilt only possible up to 15°. Bed loaded with more than 441 lbs - lateral tilt not possible	No action required - information only.
	Mattress disconnected	❖ Connect mattress.
	Use manual CPR reminder	❖ Use manual CPR reminder.
	Fatal error of the bed call service immediatelly.	❖ Notify the service department.

12.3 ALT (Automatic Lateral Therapy)

WARNING!

Risk of injury due to lateral tilt!

- Ensure that the tilting bed does not interfere with the functioning of cannulas, intubation tubes etc.
- Ensure that the tilting bed does not collide with any objects.
- Interrupt ALT immediately if the patient's condition worsens, a device or the bed is damaged or any risks to the patient are detected.

ALT allows tilting the mattress platform in order to optimize the patient's pulmonary function and prevent decubitus. Speed of the ALT cycle minimalizes the shock effect and is in accordance with patient comfort.

Before starting ALT:

- Ensure that siderails are folded up.
- Always use Linet ® stabilising ALT pads for positioning patient in centre of bed. (see Stabilising ALT Pads)
- Always use Linet ® tube holder to prevent extubation (see Ventilation Circuit Holder).
- Ensure that IV lines, breathing tubes etc. are not obstructed and work correctly.
- Reset bed to initial position.

12.3.1 Test of ALT

It is necessary to run test of ALT before starting ALT. After setting up the angles of ALT press button **1**, the bed will adjust to almost highest position. After that press green button TEST and the test will test all set up positions of ALT to check there is no collisions with accessories and items near the bed. When the test is finished and there is no collision between bed and surrounding objects then you can run the ALT.

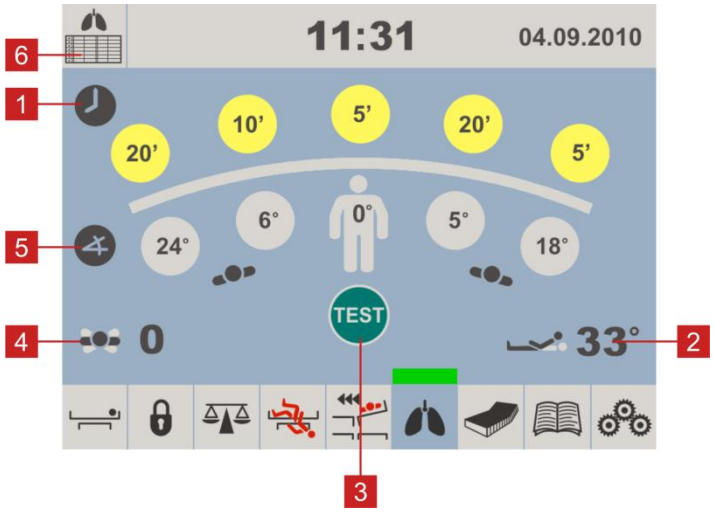
Fig. Screen Initial Position

1. Icon adjust mattress platform before test of ALT

To start test of ALT cycle:

- Activate touchscreen by pressing GO button.
- Press icon **1** until the test cycle starts.
- Press button TEST on the touchscreen to run the test.

Once the test cycle is completed, the bed will stop moving automatically and it is possible to start ALT.



1. Icons Cycle Setting - Time
2. Indicator Backrest Angle Over 30°
3. Icon Test
4. Cycle Counter
5. Icons Cycle Setting – Angle
6. Icon ALT History

Fig. Screen ALT - Cycle Values Definition and Test

Defining values of ALT cycle:

- Activate touchscreen by pressing GO button.
- Set time value by pressing and holding one of icons **1** until desired time value is reached.
- Set angle value by pressing and holding one of icons **2** until desired angle value is reached.

NOTE *It is possible to change the time values in 5-minute steps to up to 30 min.*
It is possible to change the angle values continuously up to 30 degrees.

12.3.2 Test ALT cycle

The ALT test cycle is obligatory and serves to prevent risks such as collisions of moving bed parts, extubation of the patient or disconnection of the ventilation circuit or the cannulas.

During the test cycle, the bed goes through every defined ALT angle and stops at every defined angle level.

Perform ALT test cycle:

- Press icon **3** to start test cycle.
- Hold icon **3** until test cycle is finished.

Acoustic signal sounds.
Icon Start appears instead of icon Test **3**.

12.3.3 ALT Cycle

Fig. Screen ALT - Start

1. Icon Cycle Start

To start cycle:
❖ Press icon **1**.
Set cycle starts.

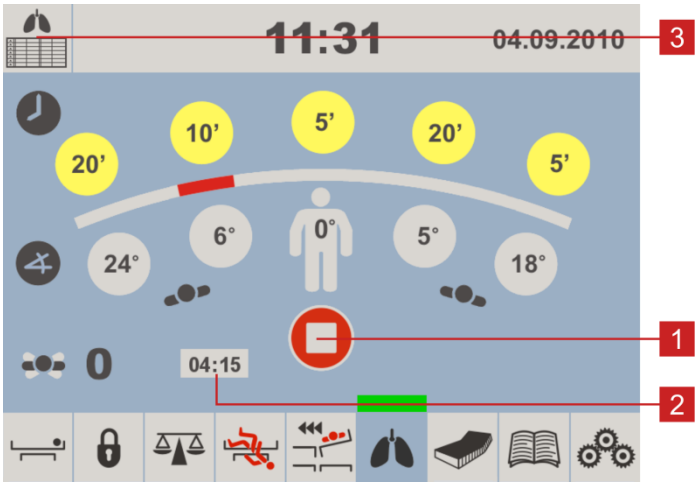


Fig. Screen ALT - Stop

1. Icon Cycle Stop
2. Countdown to Next ALT movement
3. Icon ALT History

To stop cycle:
❖ Press icon **1**.
Cycle is stopped.

Fig. Screen ALT - History

Displaying ALT History:
❖ Press icon ALT History

12.4 Bed Exit Alarm

The bed exit alarm announces the patient exiting the bed without supervision. The bed must be loaded with 77.12 lbs or more to activate the bed exit alarm.

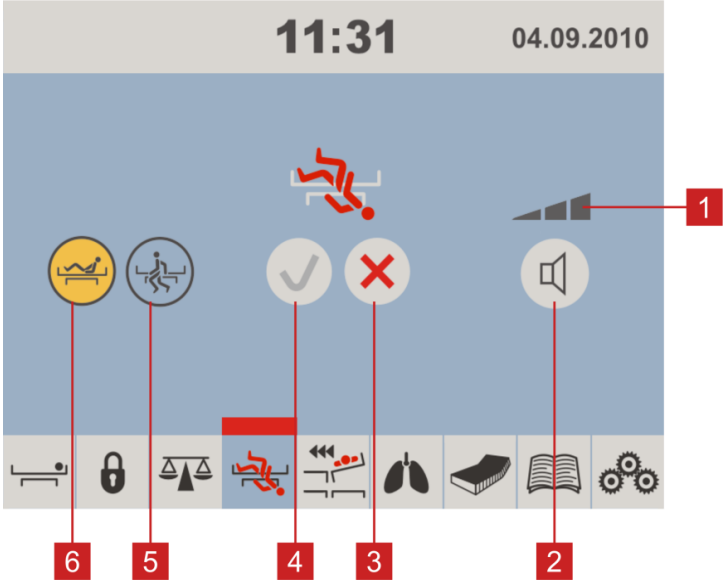


Fig. Screen Bed Exit Alarm

1. Icon Bed Exit Alarm Volume Display
2. Icon Bed Exit Alarm Volume Adjustment
3. Icon Bed Exit Alarm Off
4. Icon Bed Exit Alarm On
5. Icon Bed Exit Outer Zone
6. Icon Bed Exit Inner Zone

Activating bed exit alarm:
- Press icon **4** for 2 s.

Deactivating bed exit alarm:
- Press icon **3** for 2 s.

Adjusting volume of bed exit alarm:
- Press icon **2** until desired volume is reached.

NOTE *If set to minimum volume, the alarm is muted.*

12.4.1 2-Zone Bed Exit Alarm

Inner zone alarm (indicator 6)
Alarm starts when patient moves closer to siderails or bed ends.

Outer zone alarm (indicator 5)
Alarm starts when patient leaves bed.

NOTE *Inner zone alarm is the default mode when the bed exit alarm is activated.*

12.5 Patient Transfer

This setting allows transferring the patient from the bed to a stretcher or another bed by tilting the bed laterally while the siderails are lowered.

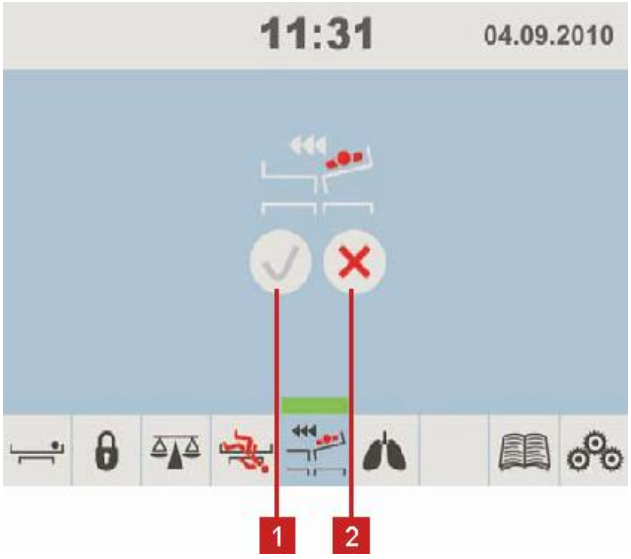


Fig. Screen Patient Transfer

1. Icon Patient Transfer On
2. Icon Patient Transfer Off

Activating patient transfer setting:
- Press icon **1**.

Deactivating patient transfer setting:
- Press icon **2**.

Transferring patient:
- Fold down siderail.
- Position stretcher or other bed beside bed.
- Slide transfer board or other transfer aid under patient.
- Activate patient transfer setting.
- Move patient from bed to stretcher or other bed.

NOTE *The patient transfer setting is deactivated automatically after 3 min. It is possible to reactivate the setting.*

12.6 Additional Supervisor Panel

The additional supervisor panel is an optional control element. The additional supervisor panel can be hung from the foot board if required. It is possible to hold the additional supervisor in the hand while operating.

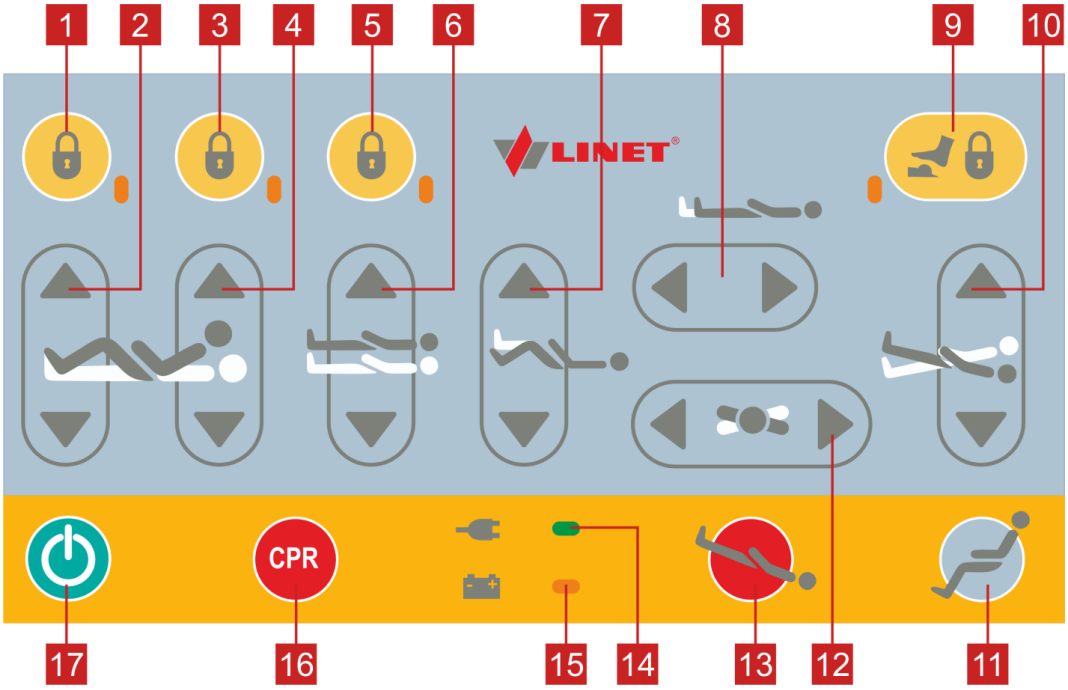


Fig. Additional Supervisor Panel

1. Button and LED Thigh Rest, Calf Rest and Extension Lock
2. Button Thigh Rest Adjustment
3. Button and LED Backrest Lock
4. Button Backrest Adjustment
5. Button and LED Height/Tilt Lock
6. Buttons Height Adjustment
7. Buttons Calf Rest Position
8. Buttons Mattress Platform Extension
9. Button and LED Foot Control Lock
10. Buttons Longitudinal Tilt
11. Button Cardiac Chair Position
12. Buttons ALT
13. Button Trendelenburg Position
14. LED Mains Power
15. LED Battery Charge Status
16. Button CPR (Resuscitation) Position
17. GO Button

To set position:

- Activate the keypad by pressing the GO button.
- Press and hold corresponding button until desired position is reached.

12.6.1 Mains power LED

Status	Meaning
lit LED	connected to the mains
unlit LED	disconnected from the mains
flashing LED	system error

12.7 Handset

A handset is included with the bed as an optional feature. The position of the handset depends on the patient's condition. The handset is available with and without button illumination. The button illumination of the illuminated handset is available when the bed is connected to the mains. The illumination is activated for 7s if any button was pressed and the illumination is activated for 10 minutes if GO Button was pressed. The functions of both handsets are identical.

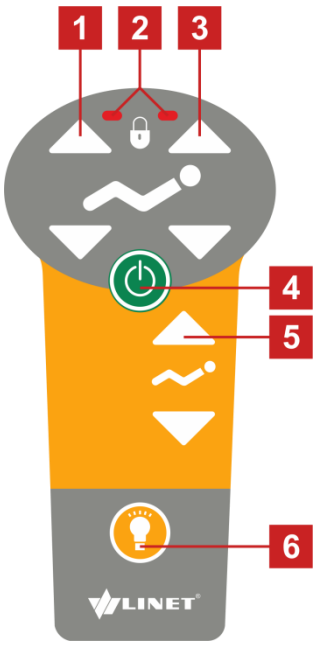


Fig. Handset

1. Buttons Thigh Rest Position
2. LED Thigh Rest/Backrest Lock
3. Button Backrest Position
4. GO Button
5. Button Autocontour
6. Button Flashlight

To switch on the flashlight:

- Press flashlight button **6**.

Set the position as follows:

- Activate the keypad by pressing the GO button.
- Press and hold function button until desired position is reached.

NOTE *Depending on the patient's condition, the nursing staff decides whether the patient is allowed to adjust the bed's position.*

If required, prevent the patient from adjusting the bed as follows:

- Disable functions.

NOTE *An adapter for the handset is available. The adapter enables quick installation and removal (e.g. replacing a defective handset, using the handset for another bed).*

12.8 Foot Control Bed Height

The foot control is optional and allows setting the height of the bed with one's feet.

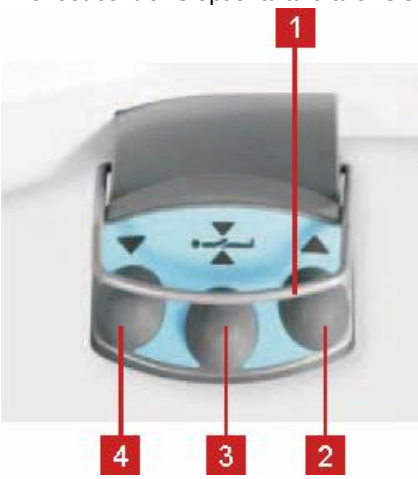


Fig. Foot Control Bed Height

1. Protection Frame against Unwanted Activation
2. Foot Switch Raise Mattress Platform
3. Foot Switch Examination Position
4. Foot Switch Lower Mattress Platform

Set the position as follows:

- Press foot switch **2**, **3** or **4** to activate foot control.
- Press and hold foot switch until desired position is reached.

NOTE: *It is possible to activate foot control by pressing GO button on the control elements of the bed then it is not needed to activate the foot control by buttons **2**, **3** or **4**.*

12.9 Foot Switch Lateral Tilt

The foot control is optional and allows setting the lateral tilt of the bed with the feet.

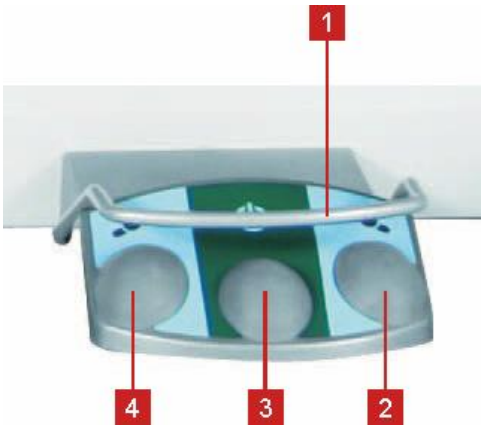


Fig. Foot Switch Lateral Tilt

1. Protection Frame against Unwanted Activation
2. Foot Switch Tilt Right
3. Foot Switch GO
4. Foot Switch Tilt Left

Set the position as follows:

- Activate the keypad by pressing the GO button.
- Press and hold foot switch until desired position is reached.

12.10 Integrated Control Panels for Patient

The control panels integrated in the middle sections of the siderails allow the patient to adjust the positions of the backrest and thigh rest.

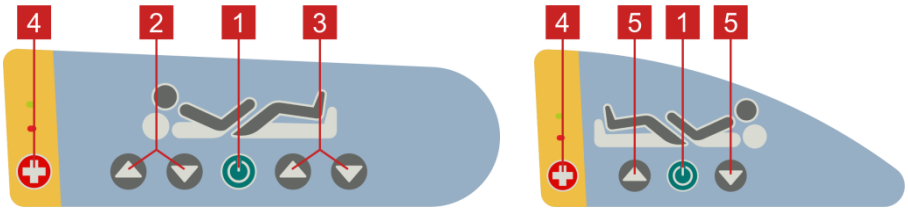


Fig. Integrated Control Panel for Patient

1. GO Button
2. Buttons Backrest Adjustment
3. Buttons Thigh Rest Adjustment
4. Nurse Call Button
5. Autocontour Adjustment (backrest and thigh rest are moved simultaneously)

Set position as follows:

- Activate the keypad by pressing the GO button.
- Press and hold function button until desired position is reached.

NOTE: *Adjusting functions of the control panel are only available when the side rail is lifted up. It is not possible to adjust the bed via integrated control panel if the side rail is lifted down.*

12.11 Quick-Action Panels

The Quick-Action panels integrated in the head sections of the siderails allow the nursing personnel and the patient to adjust the bed height.

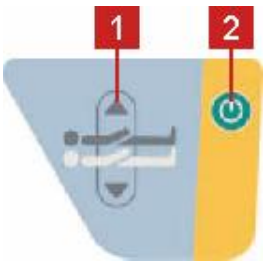


Fig. Quick-Action Panel

1. Buttons Bed Height Adjustment
2. GO Button

Set position as follows:

- Activate the keypad by pressing the GO button.
- Press and hold function button until desired position is reached.

12.12 CPR Backrest Release

WARNING!

Risk of injury due to lowering the backrest too quickly!

- ➲ Ensure that the siderails are in the lowest position.
- ➲ Ensure that there are no body parts between the siderails and the backrest.
- ➲ Press the backrest down using the mattress guard handle only.

The bed permits quick, mechanical lowering of the backrest for emergency resuscitation (CPR) procedures.

Fig. Releasing the Backrest

1. Release Handle

Set the position as follows:

- ❖ Pull and hold release handle 1.
- ❖ Press backrest down.

12.13 Siderails

WARNING!

Risk of injury, damaging or involuntary movement of the bed due to incorrect placement of accessories or handset!

- ➲ Never place any accessories or handset on the side rails in the area where the integrated side rail controller is located.

The split siderails are components of the bed. A pneumatic spring supports the operation of the split side rails. The nursing personnel are responsible for the side rails being folded up while the patient is in bed.

Fig. Fold up the Split Siderail

To fold siderails up:

- ❖ Pull siderail up until it latches.

To fold siderails down:

- ❖ Press upper edge of siderail inwards.
- ❖ Unlock siderail by pulling release handle.
- ❖ Fold down siderail slowly.

12.14 Castor Control and Bed Transport

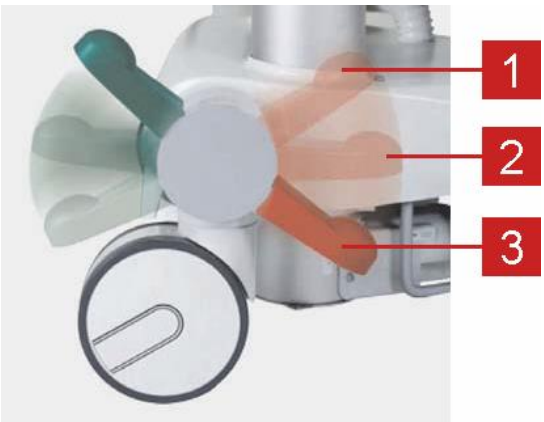
CAUTION!

Material damage due to incorrect transport and involuntary movement!

- Prior to transport, ensure that the bed is disconnected from the mains.
- Prior to transport, ensure that the auxiliary outlet plug (if available) is disconnected from the mains.
- Ensure that the castors are locked prior to assembly, disassembly and maintenance.
- Ensure that the castors are locked when the bed is occupied.
- Hang the mains cable on the appropriate hook on the bed during transport.
- Have the bed transported exclusively by nursing personnel and by at least 2 persons.

Castor control

The bed is equipped with central castor´s control and brake system.
The control levers are located in the four corners of the undercarriage.



Castor control lever positions:

1. **Forward Movement**
   The front left castor is locked. The bed moves straight ahead. If the bed is equipped with a fifth castor, this castor determines the direction of movement.
2. **Unrestricted Movement**
   All of the castors are unlocked.
3. **Braked**
   All of the castors are braked.

Fig. Positions of Castor Control Lever

Bed transport:

Fig. Bed Transport

Transporting the bed:

- Adjust bed height to at least 9 in. below maximum height.
- Push bed by handles on head or foot end.

12.14.1 i-Brake® (optional)

It is possible to equip the bed with an automatic castor brake. The automatic castor brake prevents injuries of patients and staff due to an unbraked bed.

The brakes are activated automatically 60 seconds after the bed is plugged in, and 60 seconds after they have been released if the bed is not being moved.

It is possible to activate the brakes manually as well.

12.14.2 Retractable 5th wheel i-Drive® (optional)

It is possible to equip the bed with a 5th wheel in the chassis centre. The 5th wheel helps to steer and manoeuvre the bed in long corridors and small rooms.

If the bed is plugged in, the 5th wheel automatically retracts. In this position, the 5th wheel does not obstruct access to any devices under the chassis.

To activate the 5th wheel i-Drive®:

- Disconnect the bed from the mains.
- Adjust the castor control so that the green lever points down

12.15 Mobi-Lift®

Mobi-Lift® is optional. It serves as a support handle to enhance the patient's safety when getting up. Mobi-Lift® is a support handle with a built-in height adjustment button. It allows the patient to raise and lower the mattress platform.

Fig. Mobi-Lift® Support Handle

12.15.1 Using the Support Handles

⚠ WARNING!

Risk of injury due to slipping or falling when standing up!

- Ensure that the support handles are completely inserted in the sleeve fittings.
- Ensure that no bed linen is caught between the sleeve fitting and the support handle.

To adjust the support handle:

- Lift the handle up towards the bed.
- Push the handle into the sleeve fitting as far as it will go.

To adjust the height of the mattress platform:

- Press GO button on any control element.
- Press the button to adjust the height.

12.16 Accessories

WARNING!

Risk of injury due to incompatible accessories!

➲ Use exclusively original accessories from the manufacturer.

NOTE *The manufacturer is not responsible for the use of unapproved accessories.*

12.16.1 Lifting Pole

To ensure safe use of the lifting pole:

- Never exceed the maximum load of 165.35 lbs.
- Never use the lifting pole for rehabilitation exercises.
- To prevent the bed from tipping over, ensure that the lifting pole does not project out from the bed.
- Replace plastic handle every 4 years.

To install the lifting pole:

- Insert lifting pole in corresponding sleeve fitting on lifting pole adapter at head end.
- Ensure that safety pin locks into place.

A plastic grab handle with an adjustable strap shall be attached to the lifting pole.

NOTE *The lifting pole adapter is optional. It is necessary to specify this feature in the order.*

NOTE *The date of manufacture is marked on the grab handle. Linet® recommends replacing the plastic grab handle every four years.*

12.16.2 Accessory rails

Fig. Accessory Rail

Load capacity:

- Maximum load of 11.02 lbs without leverage
- Maximum load of hook pair 22.05 lbs.

Accessories for hanging on the accessory rail:

- Urine bag holder
- Redon bottle basket
- Stainless steel rails

12.16.3 Safety Night Light

It helps the nursing staff as well as the patient to orientate.

NOTE *The night light is turned off during battery operation.*

12.16.4 Infusion Stands

WARNING!

Risk of injury due to use of incorrect accessories or because of incorrect use!
Infusion Stands must only be used for their intended use. Always read the instructions for use!

- Only mount an infusion pump to the lower (wider) telescopic section of an infusion stand above the head/foot end board.
- Never mount an infusion pump to the upper (thiner) telescopic section of an infusion stand.
- Ensure the infusion pump will not collide with any movable parts of the bed (especially backrest part) or with the patient. This must be verified after installation.
- Do not over tighten the infusion pump clamps during fitment. Over tightening may damage the infusion stand.
- Infusion pump can be only used if the infusion stand is fitted in the accessory holder socket in the head end on the undercarriage of the bed (see Fig.).

Infusion stands can be fitted to the head and foot end of the bed by either fitting into the IV/Infusion sockets mounted on the bed or using alternative accesory holder socket in the head end on the undercarriage of the bed.

- Use exclusively infusion stands with 4 hooks for hanging IV bags or baskets for intravenous solutions.
- Ensure the infusion stand individual hook 4.41 lbs maximum Safe Working Load is not exceeded.
- Capacity per hook: 4.41 lbs.
- Ensure the infusion stand 44.1lbs maximum Safe Working Load is not exceeded.
- The total maximum loading of the IV/Infusion poles must not exceed 44.1lbs.

Fig. Infusion Stand

Fig. Infusion Pump – Correct Fitment

12.16.5 Stabilising ALT Pads

The stabilising pads ensure a stable position of the patient during ALT in order to prevent extubation or disconnection of IV lines or other equipment.

Fig. Stabilising Pads

Stabilising pad set:

- 2 lateral arm pads
- 2 lateral leg pads
- 2 head pads
- 1 internal leg pad

❖ Always use Linet ® stabilising ALT pads for positioning patient in centre of bed during ALT.

Applying pads:

❖ Position the patient in the middle of the bed.
❖ Place lateral pads between patient and siderails.
❖ Attach head pads to arm pads with Velcro.
❖ Place internal pad between the patient's legs.
❖ Tilt mattress platform left and right by 30° to check if the patient's position is stable.
❖ The position is stable if the patient does neither shift nor turn over.

12.16.6 Ventilation Circuit Holder

The ventilation circuit holder prevents an extubation.

❖ Always use Linet ® ventilation circuit holder to prevent extubation during ALT.

Fig. Ventilation Circuit Holder

Applying ventilation circuit holder:

❖ Put ventilation circuit holder in hole on right or left of head end.
❖ Fasten ventilation circuit holder with wing screw provided.
❖ Put intubation tube through plastic head of ventilation circuit holder.
❖ Tilt mattress platform left and right by 30° to check if intubation tube is fastened securely.
The fastening is secure if no parts of the ventilation circuit are disconnected.

12.16.7 Monitor Tray

The monitor tray is suitable for transporting monitors with a weight of up to 33.07 lbs.

Fig. Monitor Tray

Installing the monitor tray:

- Insert two vertical monitor tray tubes into corner sleeves on foot end.
- Fixate monitor with safety belts in order to avoid any damage during transport.

12.16.8 110 V Auxiliary Outlet

DANGER!

Danger to life due to incorrect use!

- Do not use auxiliary outlet for life-sustaining equipment.
- Ensure that total leakage current in the chassis does not exceed 10 µA.

DANGER!

Danger to life due to damaged cables or faulty grounding!

- Do not use damaged cables.
- Use plastic hooks on head end to secure cables when moving the bed.
- Check grounding regularly.
- Ensure that power outlet plug is connected to a receptacle marked with a green dot for **Hospital Only** or **Hospital Grade**.

Fig. Auxiliary Outlet (110V)

An auxiliary power supply outlet for medical devices is located under the foot board.

Maximum total load:

- 10 A

Receptacle rating:

- 125 Vca
- 10 A
- 60 Hz

NOTE *Auxiliary outlet energy is available exclusively it the Multicare accessory plug is connected to the mains.*

12.16.9 Nurse Call

Control panel for nurse call activation:

Control panels for nurse call activation are located on the insides of the foot end siderails. Speakers and microphones are on the insides of the head end side rails.

Fig. Nurse call control panel

1. Nurse call button
2. Speaker and microphone

To activate the nurse call function:

- Press nurse call button **1**.

If nurse confirms nurse call activation:

- Press nurse call button **1**.

Patient can speak into microphone **2** located on inside of head end side rails.

12.16.10 Oxygen Bottle Holders

WARNING!

Risk of injury with oxygen bottle holder due to incorrect use or due to careless driving!

- Ensure the oxygen bottle holder is correctly fitted in correct position.
- It is necessary to place oxygen bottle holder (with or without O2 bottle) before transport to secure transport position.
- Be aware of people or objects in close proximity when driving or manipulating the bed equipped with oxygen bottle holder.
- Secure the oxygen bottles against falling or involuntary movement with rubber strap.
  Place the oxygen bottle holder on the bed by instructions in the following text.
  Ensure the oxygen bottle valve will not get damaged by careless or incorrect manipulation or placement.

The oxygen bottle holders are suitable for transporting oxygen bottles with a weight of up to 33.07 lbs and a volume of 11 lbs.

Version A

- Put oxygen bottle holder on transversal profile behind head end.

NOTE *Using oxygen bottle holder 4MAR2010PC004 is not possible if the bed is equipped with an additional adapter for a lifting pole.*

Fig. Oxygen Bottle Holder A

Version B

- Put holder on sleeve fittings in multifunctional accessory adapter on chassis.
- Ensure the locking pin of oxygen bottle holder B is locked in sleeve fitting.

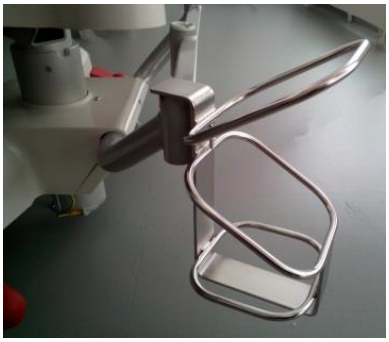


Fig. Oxygen Bottle Holder B – correct fitment

Fig. Oxygen Bottle Holder B – incorrect fitment

Version C

- Put oxygen bottle holder on all 4 accessory adapters on chassis.

Fig. Oxygen Bottle Holder C

12.16.11 Protector

WARNING!

Risk of injury due to patient falling out of bed!

- Ensure the Protector is securely anchored to the bushing.
- Always ensure the safety pin is secured on the extension bar (3).
- Always check that the side rail is properly locked.

Protector is optionally available accessory for Multicare bed. The main purpose of the Protector is to lower the risk of patient falling out of the bed.

Protector is not standard equipment of the bed and must be ordered separately. Protector can be used with both extended and non-extented bed.

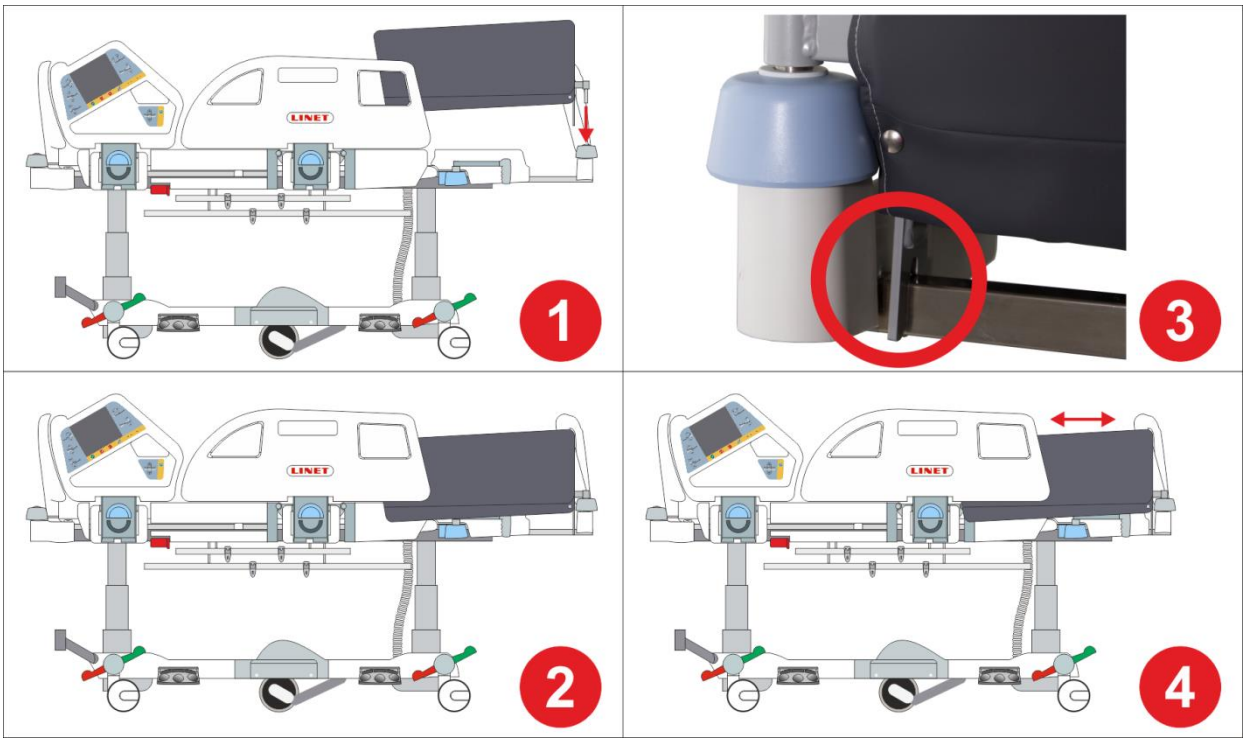


Fig. Installation of the Protector

1. Inserting the Protector to the bushing in the wall bumper
2. Protector inserted in bushing
3. Safety pin secured on the extension bar
4. Installed Protector on the Multicare bed (it is possible to use bed extension with Protector)

Install the Protector on the bed as follows:

- Insert the tube of the Protector into the accessory bushing in wall bumper on the foot end of the bed (**1**).
- Ensure the safety pin is secured on the extension bar (**3**).

Uninstall the Protector from the bed as follows:

- Grab the Protector by its upper edge.
- Pull the Protector out of the accessory bushing.

12.16.12 Hercules Patient Repositioner

Hercules Patient Repositioner is intended for Hercules ready Eleganza 5 bed. Installation of Hercules must be done by qualified service technician authorized by the manufacturer. For detailed informations about Hercules follow the user manual for this product.

WARNING!

Ensure that Hercules is operated exclusively by qualified personnel.

WARNING!

Hospital staff is responsible for the patient during his or her repositioning, The patient should not be left unattended on the bed during his or her repositioning!

WARNING!

In Backrest angle of 30 degrees or more it is not possible to use Hercules. It is indicated by LED on the side of Hercules. Follow the user manual for Hercules!

WARNING!

Do not use Hercules without the gas spring securely installed!

WARNING!

In order to facilitate CPR Backrest Release push the Backrest down using head siderail!

WARNING!

Risk of squeezing between head siderails and sides of the Hercules!
Manipulate carefully with head siderails when Hercules is installed!

Purpose:
Hercules is intended to assist caregivers with up-in-bed patient repositioning.

Description:
Hercules consists of Hercules Drive, Hercules Dream Sleep Surface / Hercules dream Gel Sleep Surface and Hercules Dream Sheet.

Placement:
Hercules is located at the end of the Backrest.

13 Using OptiCare or Symbioso

13.1 Preparing the Bed for the Patient

DANGER!

Risk of suffocation due to air-impermeable mattress cover!

- Use mattress cover correctly.
- The nursing staff are responsible for the safety of the patient on the mattress cover.

WARNING!

Risk of injury when positioning patient on the bed!

Before positioning the patient on the bed:

- Ensure that mattress is completely and correctly inflated.
- Ensure that mattress is correctly secured with safety straps.

CAUTION!

Material damage due to dampness or contamination!

- Make sure mattress cover has been cleaned and is completely dry (see Cleaning/ Disinfection).

13.1.1 Preparation

- Inflate mattress (see Setup).
- Put a sheet loosely on the mattress if not prescribed otherwise by qualified personnel.

13.1.2 Positioning the Patient on the Bed

- Put the patient on the mattress.

Create the ideal patient position:

- If additional blankets or sheets are used, make sure that ease of movement is sufficient.
- Ensure that blankets, sheets, clothing etc. do not cause pressure sores (e.g. due to creases, seams etc.).
- Do not place any additional sheets, blankets etc. between mattress and patient.

14 Integrated Mattress Controls

14.1 OptiCare

The OptiCare mattress is an integrated solution for the Multicare bedframe, control and information on status of the mattress is by the touch screen on the Multicare frame.

14.1.1 Patient in bed detection (PIB)

Patient in bed detection system detects when a patient has entered or left the bed. This automatically starts the optimization proces on patient ingress and puts the mattress into Standby mode on patient egress. During Standby mode mattress areas A and B are inflated to a static pressure. There is a short stable pressure detection delay before reacting to change in patient PIB status to prevent unnecessary mode changes because patient has changed position.

14.1.2 Mattress Screen

The mattress screen can be called up on the Multiboard for operating and controlling the mattress replacement system by touching the mattress icon at the bottom of the screen.

1) MATTRESS NOT CONNECTED

When OptiCare compressor is installed on the bed but OptiCare mattress is not connected to the compressor „Mattress Not Connected“ screen appears.

NOTE: Red strip above the mattress icon is flashing in this screen.

NOTE: If the OptiCare mattress has been deliberately removed from the bed frame in order to use an alternative mattress then you must log out the OptiCare (see section 12.2.3).

To connect OptiCare mattress to the compressor:

❖ connect each air pipe to the compressor.

Fig. Mattress Not Connected Screen

2) MATTRESS IDENTIFICATION

When OptiCare mattress is connected to the compressor and its identification starts „Mattress Identification“ screen appears.

NOTE: Number above the text „MATTRESS IDENTIFICATION“ indicates identification countdown.

To achieve identification of connected mattress:

❖ wait until identification countdown disappears.

Fig. Mattress Identification Screen

3) MATTRESS INFLATION

When OptiCare mattress is identified it is not prepared for a patient because mattress is not inflated enough.

NOTE: Number above the text „MATTRESS INFLATION“ indicates inflation countdown.

To achieve minimum inflation of the mattress:

❖ wait until inflation countdown disappears.

Fig. Mattress Inflation Screen

4) MATTRESS PREPARED FOR PATIENT

When red cross over the mattress patient icon disappears the mattress is ready for a patient.

NOTE: Flashing **OPT icon** indicates continuing inflation.

To use the mattress:
❖ position patient on the mattress.

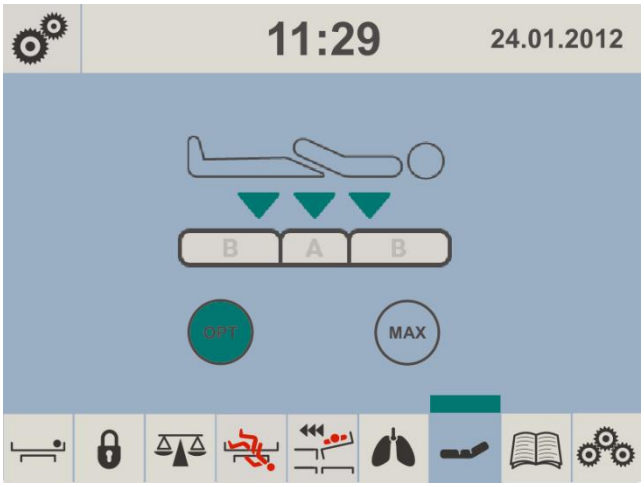


Fig. Mattress Prepared for Patient

5) PATIENT ON THE MATTRESS

When there is a patient on the mattress patient icon turns to black color. As long as the patient remains on the mattress automatic optimization will continue. Optimization will occur if the patient´s position changes sufficiently to trigger Optimization Detection or if initiated by the Optimization automatic timer. The integrated Micro-Climate Management system will start working automatically when the patient gets into bed and stop if the patient gets out.

NOTE: During pressure optimization the **OPT icon** is flashing. Fully green **OPT icon** and green strip above mattress icon indicate mattress has achieved optimum pressure.

Fig. Patient on the Mattress

Optimization will stop working and the mattress air pressure will be set at a fixed level if
❖ the bed frame is laterally rotated by more than 10 degrees.
❖ Trendelenburg or Anti-Trendelenburg angle of greater than 6 degrees is in use.

NOTE: If at any time nursing staff feel it necessary to re-optimize the patient then this can be initiated manually by touching the **OPT icon**. This does not over-ride Optimization settings and this process will continue as before.

Manual pressure optimization:
❖ press **OPT icon**.

To reduce frequency of pressure optimizations:
❖ press **SLEEP icon**.

SLEEP icon turns yellow and duration of this function is indicated with value above **SLEEP icon**.

To reduce intensity of Micro-Climate Management:
❖ press **SLEEP icon**.

SLEEP icon turns yellow and duration of this function is indicated with value above **SLEEP icon**.

6) MAXIMUM MATTRESS INTERNAL PRESSURE

To set Maximum Mattress Internal Pressure:

❖ press **MAX icon**.

NOTE: During inflation **MAX icon** is flashing until it turns yellow.

NOTE: After 30 minutes the pressure optimization starts again. Countdown is displayed on the screen above **MAX icon**.

NOTE: Maximum Mattress Internal Pressure can be operated with or without a patient on the mattress.

NOTE: To extend Maximum Mattress Internal Pressure you can press **MAX icon** again.

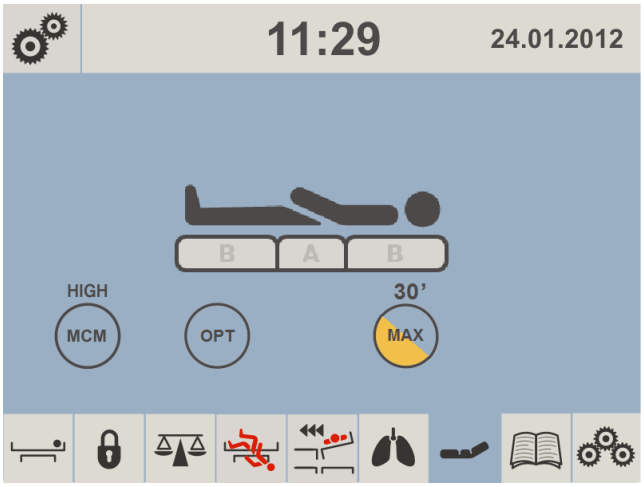


Fig. Maximum Mattress Internal Pressure

7) PRESSURE COMFORT ADJUSTMENT

The mattress pressure can be adjusted based on the patient´s needs, press **-+ icon**. The pressure can be separately adjusted in the A section (seat section) or in the B section (torso and legg mattress areas). The black arrow below the A and B section level indicators indicates the optimized pressure.

To adjust pressure after pressure optimization:

❖ press **- + icon**

❖ press **– icon** or **+ icon** according to the section to be adjusted (A or B)

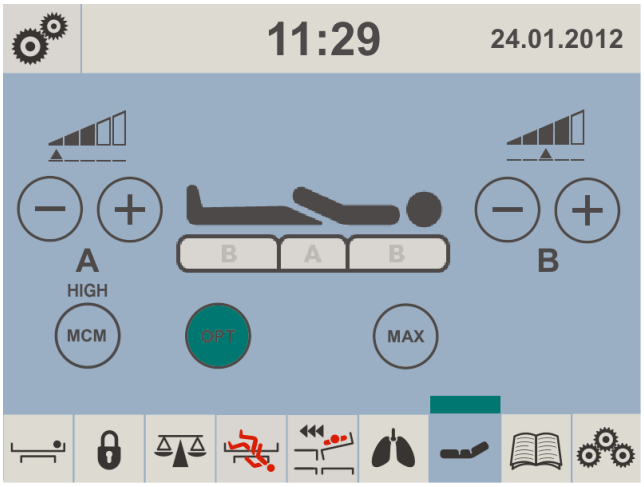


Fig. Pressure Adjustment

8) MCM MODE

During MCM Mode it is possible to set intensity of Micro-Climate Management.

To set intensity of Micro-Climate Management:

❖ press **MCM icon** and repeat it until desired intensity is reached.

Each press of the **MCM icon** will step the option through its possible setting of **LOW, HIGH and OFF**.

Fig. MCM Mode

NOTE: During MCM Mode it is possible to set Mattress Pressure Optimization (OPT), Maximum Mattress Internal Pressure (MAX) or adjust pressure with **-+ icon** if it is not disabled in Setting Screen.

9) CPR MODE (CPR ACTIVATED)

When CPR is activated the mattress will deflate and chest compression can start immediately.

NOTE: The countdown is displayed above the patient icon and indicates the amount of minutes the mattress stays deflated. Red strip with „CPR“ text appears above the mattress icon.

NOTE: EXIT CPR icon is optional. Service technician approved by manufacturer is allowed to display or hide this icon.

Fig. CPR Activated

To deactivate CPR Mode:
❖ press **EXIT CPR icon**.

The mattress will inflate again and return to the mode it was in before CPR started.

NOTE: For manual CPR see section 14.1.4.1.

10) SETTING

Setting screen is used to enable or disable pressure (comfort) adjustment and automatic Micro-Climate Management. To return to the mattress screen press either of the small mattress icons.

NOTE: A red cross over any icon means the function is disabled.

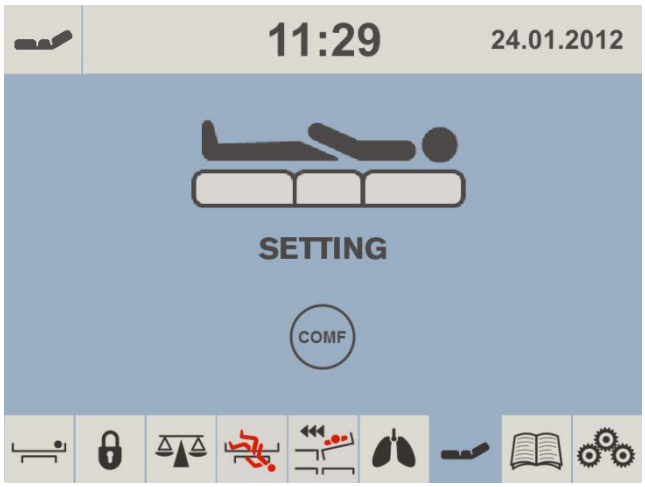


Fig. Setting Screen

To enter Setting screen:

❖ press  icon.

To hide or unhide - + icon on the other screens:
❖ press **COMF icon** in the Setting Screen.

To disable or enable MicroClimate Management:
❖ press **MCM auto icon**.

11) ALERTS

UNPLUGGED
When the power cable is unplugged or mains power fails, the screen will show the following alert. This alert will automatically disappear when mains power is restored.

Fig. Alert - Unplugged

NOTE: Red strip above the mattress icon is flashing during this alert.

To eliminate this alert:
❖ **connect the power cable to the socket!**

ERROR

When a red triangle with exclamation mark appears in the screen the mattress has a system error. The number in the screen is linked to the type of error.

NOTE: Red strip above the mattress icon is flashing during this alert.

To eliminate an error:

- **note down the number and contact service department approved by the manufacturer immediately!**

Fig. Alert - ERROR

DISCONNECTED AIR PIPES

If either the red, yellow or black air pipe is disconnected from the System Control Unit the following alert appears in the screen.

NOTE: Red strip above the mattress icon is flashing during this alert.

NOTE: Blue air pipes disconnected from the Sytem Control Unit do not cause this alert!

To remove this alert:

- **check and reconnect each air pipe to the compressor!**

Fig. Alert – Disconnected Air Pipes

CLOSE CPR

When CPR valve is opened and the mattress is inflating this screen appears.

NOTE: Red strip above the mattress icon is flashing during this alert.

To remove this alert:

- **close CPR valve manually!**

Fig. Alert – CLOSE CPR

12) AUTOMATIC CALIBRATION

Automatic Calibration is preventive process taking place after 200 hours of SCU activity when the mattress is for 1 minute in standby mode with no patient in bed. Following screen appears during this process.

NOTE: Automatic Calibration is automatically interrupted during intervention of patient or hospital staff.

Fig. Automatic Calibration

13) PRESSURE OPTIMISATION DISABLED

If lateral tilt angle is more than 10° (7° is a limit value for tilt reduction) pressure optimisation is disabled for lateral tilt, Trendelenburg tilt or Anti-Trendelenburg tilt. Following screen is displayed in this case.

Fig. Automatic Calibration

14) POP-UPs

COMPRESSOR (SCU) NOT CONNECTED
When SCU is removed from the bed or communication between the bed and the SCU is lost this POP-UP appears.

NOTE: There is red triangle on this screen instead of the mattress icon during this alert.

To remove this POP-UP:
- **install compressor on the bed!**

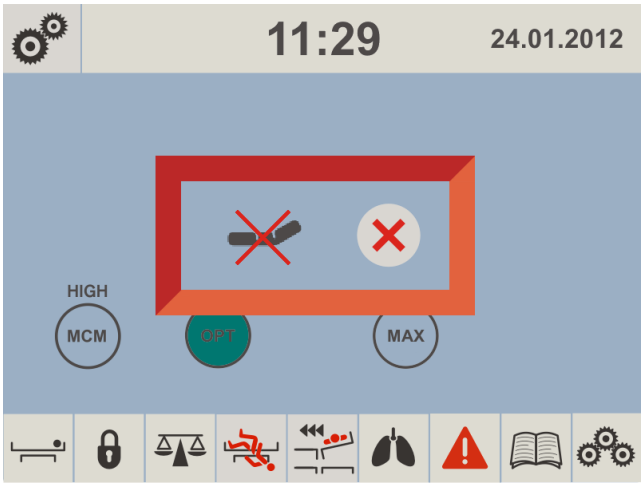


Fig. POP-UP – Compressor Not Connected

USE MANUAL CPR

When the CPR valves on the mattress sides needs to be activated to deflate mattress for CPR (e. g. during transport or when power supply is down) this pop-up will appear in the screen.

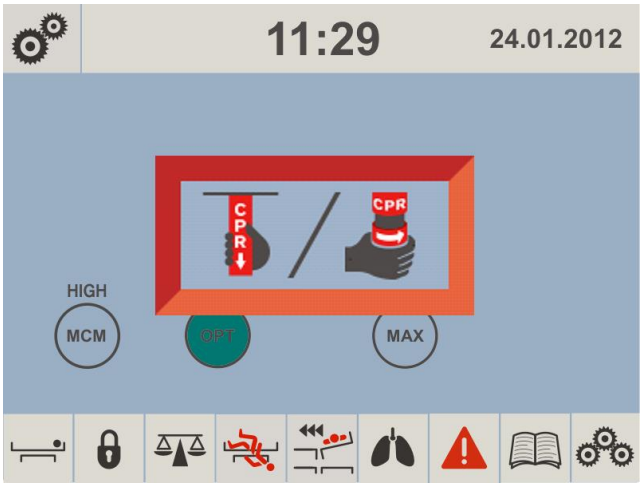


Fig. POP-UP – Use Manual CPR

14.1.3 Optimization Detection (OPD)

OPD valve system in the seat (Area A) will open when touched by the patient to allow additional air to enter the seat cells until the patient is lifted high enough to close the valves.

14.1.4 CPR

Cardiopulmonary Resuscitation Mode causes the mattres to deflate completely to facilitate resuscitation of patient. Typical deflation time for OptiCare is 15 seconds (max. 30 s). After 55 minutes of CPR Mode there will be an audio alarm every 30 seconds. After 60 minutes system will return to OPT Mode or MAX Inflate Mode.

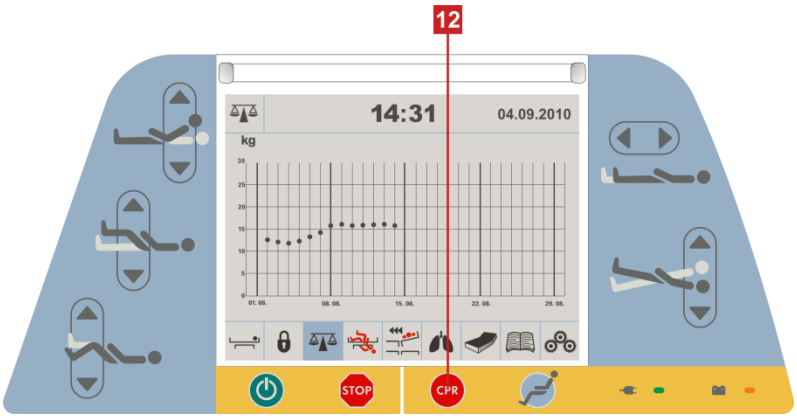


Fig. CPR button

To activate the CPR Mode:

- Press and hold CPR button **12** on Multicare side panel for at least 3 s.
- The mattress platform will straighten up.

The mattress deflates completely.

NOTE: *It is possible to use ACP also to activate CPR Mode.*

14.1.4.1 CPR during Transport or Power loss

OptiCare is equipped with CPR *valve* on both sides next to the manual backrest release.

- Open CPR valve on patient's left- or right-hand side by turning the end of CPR valve to the right and aligning the CPR red heart with the red circle.
- The mattress will deflate.
- The mattress platform will straighten up (See note below.).

CPR Mode is activated.

NOTE: *The mattress platform will not enter the CPR position unless the CPR Mode button is also pressed and held until the correct position has been reached.*

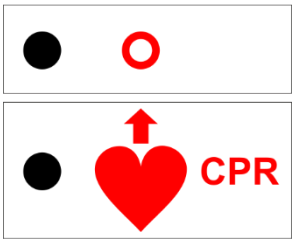


Fig. Open CPR valve

Fig. CPR valve on Multicare bed

Fig. Closed CPR valve

14.1.5 Alarms

WARNING!

Risk of injury due to lack of support!

If the air mattress is empty so that the patient is lying directly on the foam base, and it is not possible to solve the problem by following the troubleshooting instructions:

➲ Move patient onto a suitable support surface as quickly as possible.

OptiCare is equipped with a comprehensive alarm system which detects any problems with the system performance. Alarms are indicated by a red triangle on the mattress screen and an audible alarm signal.

In case of an alarm:

- Mute the alarm signal.
- Make a note of the error code number displayed on the mattress screen.

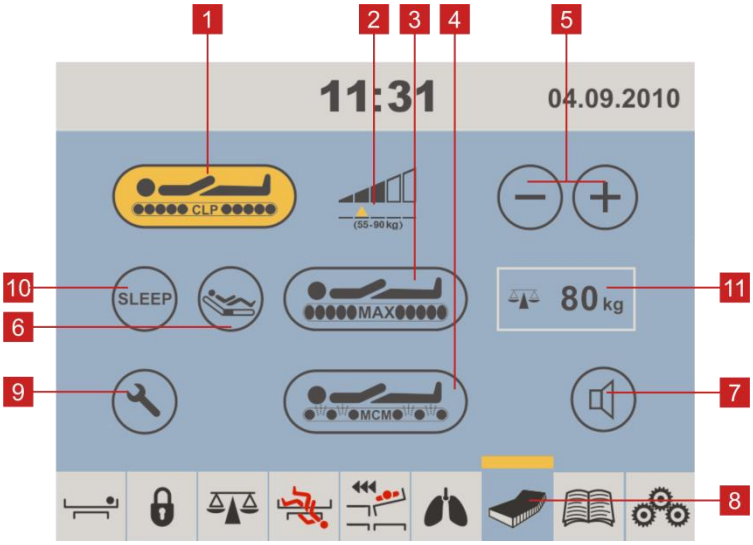
Check for errors (see Troubleshooting).

14.1.6 Transport Mode/Power Failure

This mode is activated automatically if no mains power is available to the SCU. Neither OPT Mode nor MCM Mode will be operational.
The mattress maintains sufficient air pressure to support the patient for approximately 12 hours.

14.2 Symbioso

14.2.1 Mattress Screen



The mattress screen can be called up on the Multiboard for operating and controlling the mattress replacement system.

1. Button CLP Mode
2. CLP Pressure Indicator
3. Button Max Inflate Mode
4. Button MCM On/Off
5. CLP Pressure Level Control
6. Button Fowler Boost Inhibit
7. Button Mute Audio Alarm
8. Selection Button for Mattress menu
9. Button Service Data
10. Button Sleep Mode
11. Weight of patient

Fig. Mattress Screen

Before any action requiring use of the mattress screen:

- Activate the touchscreen by pressing the GO button on the Multiboard.

14.2.2 Max Inflate Mode

Max Inflate Mode guarantees a firm surface as required for nursing procedures. This mode interrupts CLP (Cons- tant Low Pressure) action while at the same time maintaining the MCM (Micro-Climate Management) function.

Max Inflate Mode is required for:

- transferring patients
- complex nursing procedures
- transporting the bed on battery power only

To activate/deactivate the mode:

- Press button **3**.

The mattress icon will flash white during the inflating process, and remain black as soon as maximum inflation is obtained.
After 30 minutes, the SCU will automatically switch back to CLP mode. It is possible to re-select Max Inflate Mode once. After that, at least 30 minutes of CLP mode are required before Max Inflate Mode is enabled again.

14.2.3 CLP Mode (including Fowler Boost)

CLP Mode keeps the mattress pressure at the level selected. The pressure is checked every 30 seconds, and adjusted if necessary.

To activate/deactivate the mode:

- Press button **1**.

14.2.4 Pressure Levels

WARNING!

Risk of injury due to incorrect pressure level!
The recommended pressure levels may not be the optimum for all situations but should be used in conjunction with clinical judgement based on the individual patient; e.g. weight, weight distribution, position and comfort needs.

- ➲ Do not reduce pressure level setting by more than 1 step for the patient's comfort.
- ➲ Regardless of the pressure level, make sure the patient is not lying directly on the foam base.

It is possible to select different pressure levels to match weight, weight distribution and comfort requirements.

To change the pressure level:

- Press - or + of button **5** until required pressure level is obtained.

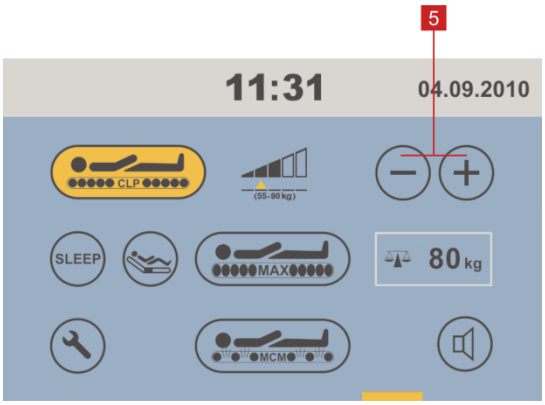


Fig. Pressure Levels

Recommended pressure levels:

- up to 110 lbs. (54 kg)
- 111-200 lbs. (55 – 90 kg)
- 201-300 lbs. (91 – 135 kg)
- 301-400 lbs. (136 – 180 kg)
- 401-559 lbs. (181 – 254 kg)

NOTE *The pressure levels indicated are merely recommendations. Which pressure level is best suited for a patient depends on factors such as weight, weight distribution and personal comfort.*

14.2.5 Automatic Recommended Pressure Function

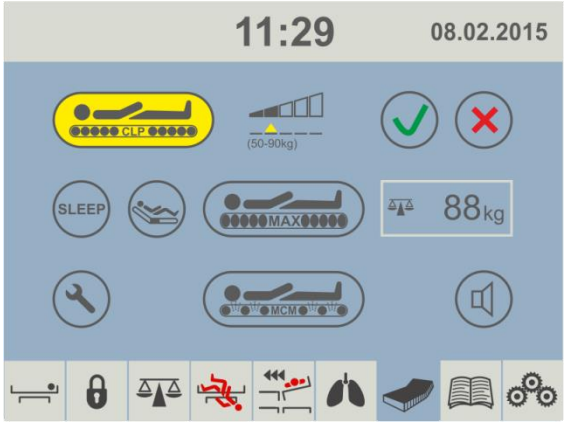


Fig. Reccomended Pressure Screen

Recommended pressure function displays recommended pressure according to the patient's weight.

The recommended pressure is dislayed if:

- The load of the mattress will rise above 66 lbs/30 kg.
- CPR or MAX mode was completed (turned off) with load of mattress higher than 66 lbs/30 kg.

NOTE: *The pressure is not recommended if same patient returns on the bed (patient with same weight [weight tolerance ±11 lbs/5 kg.]).*

To accept recommended pressure:

- Press confirming button.

After pressing DECLINE button:

- Screen will turn back into manual pressure selection.

The yellow indicator marking the recommended pressure and mattress bar will keep blinking until:

- Recommended pressure is confirmed or declined.
- The load of the mattress will lower below 66 lbs/30 kg.
- Other mode (CPR or MAX) is selected.

NOTE: *If mattress is not in "Automatic Recommended Pressure Function Screen" the screen shows icons* **+** *and* **–** *instead of accept and decline buttons.*

14.2.6 Fowler Boost Function

The Fowler Boost function lineary increases pressure in the seat section according to position of back rest.
It is possible to disable this function for lighter patients.

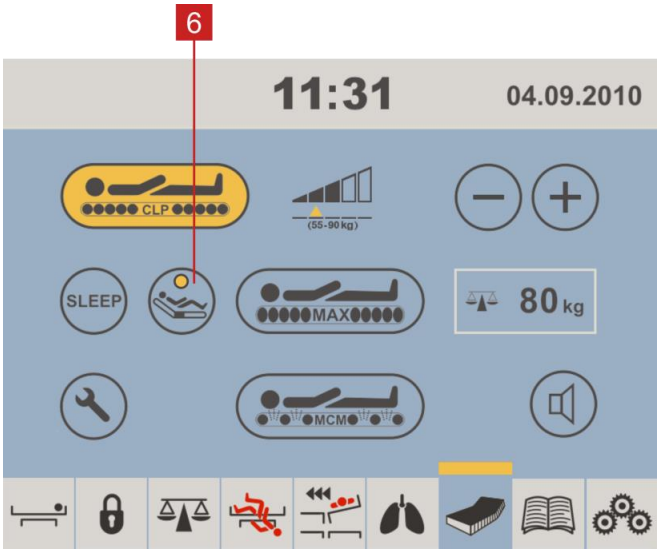


Fig. Fowler Boost Function

To enable/disable the function:

❖ Press button **6**.

14.2.7 MCM Mode (Micro-Climate Management)

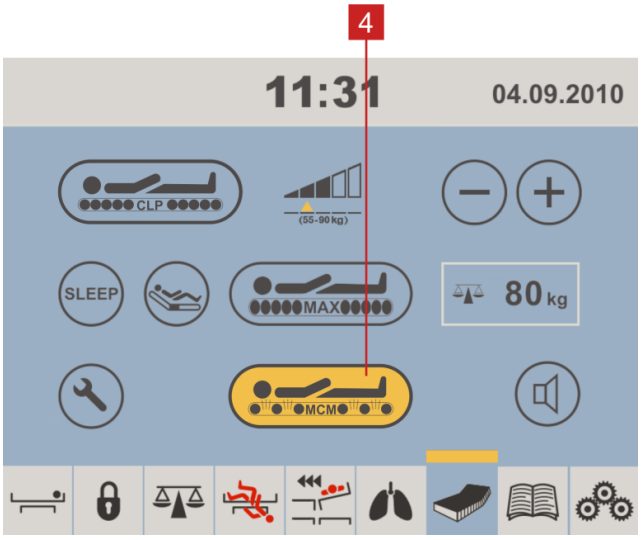


Fig. MCM Mode

The MCM mode is the default mode for the Symbioso 200 mattresses, as this is the most effective mode for the patient in view of the clinical effect. The MCM function blows through the parts under the patient and removes moisture as one of the factors contributing to the development of bed sores. You can switch to the MCM mode by pressing icon 4 and the mode is also selected automatically when the NEW PATIENT icon is pressed or the weights are reset.

MCM Mode is required for:

■ patients who need skin Micro-Climate Management

To activate/deactivate the mode:

❖ Press button **4**.

14.2.8 Sleep Mode

Sleep Mode can be used to reduce any potential disturbances while the patient is sleeping. This mode reduces the blower speed by 50% while at the same time guaranteeing a sufficient airflow under the patient. In Sleep Mode, the CPL adjustment cycle is extended from 30 seconds to 30 minutes.
It is possible to disable this function in any mode but Max Inflate.

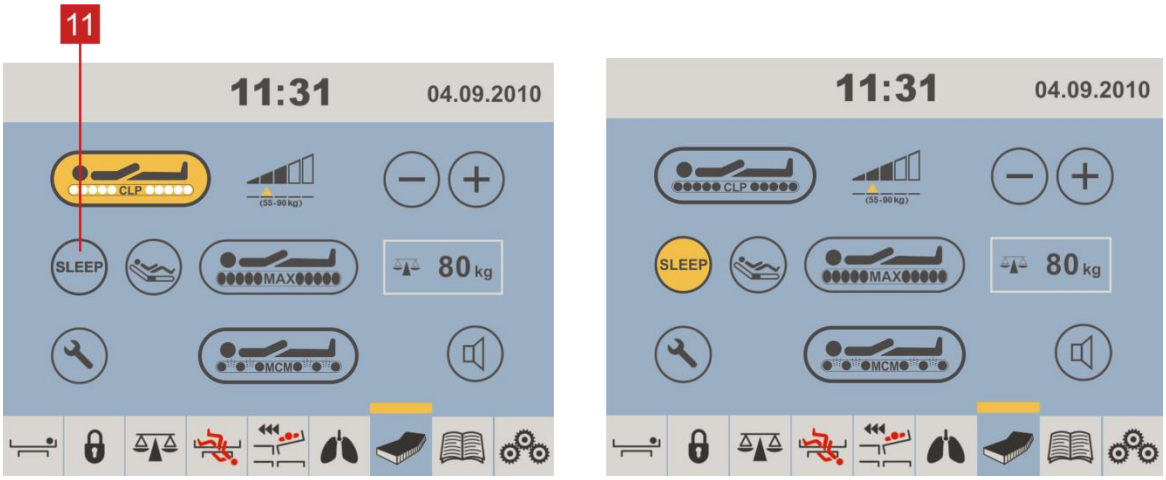


Fig. Sleep Mode

To activate/deactivate the mode:

- Press button **11**.

Button **11** turns yellow during Sleep Mode.

14.2.9 CPR

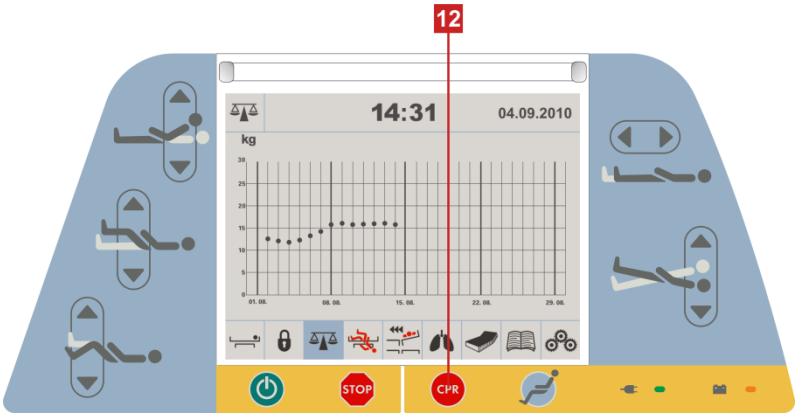


Fig. Multicare Side Panel

To activate the mode:

- Press and hold CPR button **12** on Multicare side panel for at least 3 s.
- The mattress platform will straighten up.

The mattress deflates completely.

Mattress pressure indicator strip on mattress screen turns red. CPR symbol appears on touchscreen in place of CLP icon.

Fig. CPR Symbol

To deactivate the mode:

- Select CLP Mode or Max Inflate Mode.

14.2.10CPR during Transport

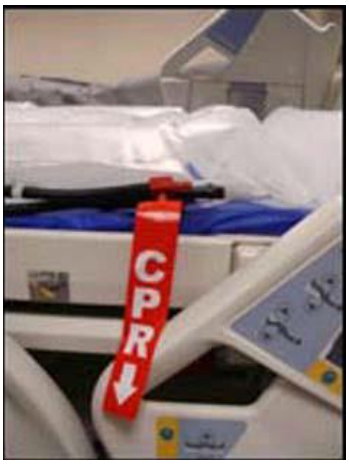


Fig. CPR Strip

Symbioso 250 is equipped with CPR strips on both sides next to the manual backrest release.

- Pull CPR strip on patient's left- or right-hand side.
- The mattress will deflate.
- The mattress platform will straighten up.

CPR Mode is activated.

Before re-inflating the mattress:

- Unzip cover.
- Replace CPR strip.
- Close cover.

NOTE *In the pictures, the mattress is shown without the cover for clarity. Removing the cover is not necessary for replacing the CPR strip.*

14.2.11Alarms

WARNING!

Risk of injury due to lack of support!

If the air mattress is empty so that the patient is lying directly on the foam base, and it is not possible to solve the problem by following the troubleshooting instructions:

➲ Move patient onto a suitable support surface as quickly as possible.

Symbioso 250 is equipped with a comprehensive alarm system which detects any problems with the system performance.
Alarms are indicated by a red triangle on the mattress screen and an audible alarm signal.

In case of an alarm:

- Mute the alarm signal.
- Check all air connections.
- Turn SCU off and on again by removing power cord from socket and replacing it.

14.2.12Transport Mode/Power Failure

This mode is activated automatically if no mains power is available to the SCU. Neither CLP Mode nor MCM Mode will be operational.
The mattress maintains sufficient air pressure to support the patient for approximately 12 hours. The foam base makes sure that patient does not lie directly on the mattress platform once the mattress deflates.

Fig. Icon Mattress Unavailable

Possible reasons for SCU not being supplied with mains power:

- Auxiliary power cord unplugged to move bed with patient
- Power failure

Icon Mattress Unavailable will appear on both touchscreens, regardless of the menu currently in use.

- Clear indication by pressing red symbol X.

Fig. Indication Cleared

Mattress icon disappears from the menu bar.

- Provide mattress replacement system with mains power as soon as possible.

14.2.13Foot Surface Extension

Fig. Selector Valve for Foot Extension

It is possible to manually inflate and deflate either of the 2 sets of air cells nearest the foot board as required to match the length the mattress platform has been set to. Furthermore, it is possible to manually deflate one of the air cells to create a lower section for the patient's heels which helps with the prevention and treatment of pressure sores.

The selector valve for the foot extension is located on the right-hand side of the foot end, inside the mattress cover to protect it from dirt and fluids.

To extend the foot surface:

- Open zipped flap on right-hand side of foot end.
- Hold valve with thumb and forefinger of one hand and use thumb to push in white locking pin.
- Rotate valve to desired position.

- Release white pin so that it latches with an audible click.
- If pin does not latch, move valve a little to the left or right until there is an audible click.
- Close zipped flap.

Valve positions

The valve positions are labelled on the valve to show which setting has been selected.

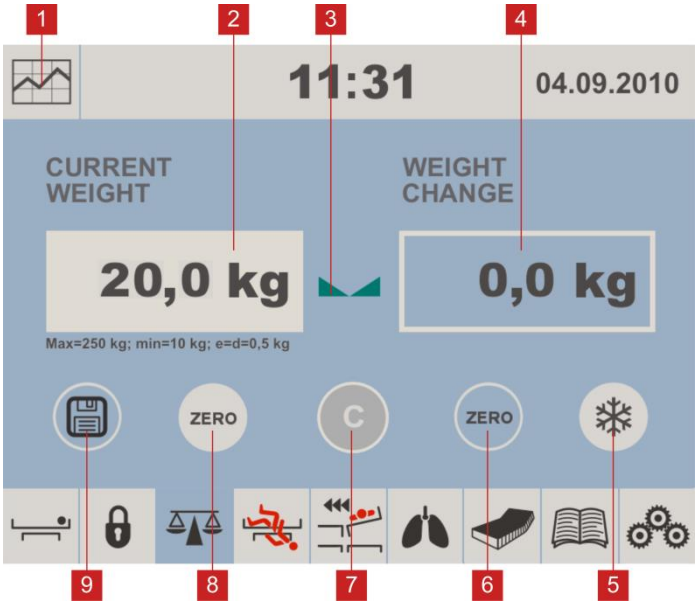
Fig. Valve Positions

15 Patient Weighing

15.1 Control Element Weighing System

Multicare is equipped with a weighing system that allows weighing the patient in bed. The control and display elements for the weighing system are on the Scales screen on the LCD touchscreen.

15.1.1 Screen Scales



1. Icon Subscreen History
2. Primary display – Current Weight
3. Icon of Stabilized Status of Weights
4. Secondary display – Weight Change
5. Icon Hold
6. Icon Zero Secondary dislay
7. Icon Cancel
8. Icon Zero Primary display
9. Icon Save Weight History

Fig. Screen Scales

15.1.2 Displays

- Primary Display with Current Weight **2**:
  Displays the calibrated and metrological certified weight.
- Secondary display with Weight Change **4**:
  Shows the weight difference as compared to the last Zero or Hold setting.

15.1.3 Reseting Weighing Results

Weight reset is used to reset weight on both displays and set up user zero, which sets the maximum weight range of the weighing system.
Weight reset must be done with an empty, unloaded bed, without the mattress and accessories. Weight reset is done after installation, weight verification or servicing.

To reset weight:

- Remove all accessories and the mattress from the bed. Position the bed about 8 in. above the lowest
- position and the mattress platform in the horizontal position.. Ensure that nothing touches the bed except you.
- Press icon/button 8 (Zero) for 0.5s. Both displays will start to blink.
- Press icon/button 8 to confirm weight reset.

"0" is shown on both displays and an acoustic signal confirms weight reset.

NOTE: *This function is designed only for metrological certified calibration in recommended periods.*

15.1.4 Taring Weight

Taring is used to set "0" on both displays before placing the patient on the bed. It is used to show the actual weight of the patient.
Taring must be done with an unloaded bed, without the patient. The mattress platform is positioned about 8in. above the lowest position and the mattress platform is in the horizontal position.

To tare weight:

- Ensure that nothing touches the bed except you.
- Press icon 8 (Zero/T) for 0.5s. The secondary display starts blinking. Hold the icon for another second until the primary display starts to blink.
- Press icon 8 to confirm taring. "0" is shown on both displays.

Place the patient on the bed.

To cancel taring:

- Press icon 7 while taring.

15.1.5 Bed Overload

If the bed load is over 550 lbs.:

- The "Hi" icon is shown on the display.

NOTE: *If the bed is overloaded it is impossible to position or manipulate the bed until overloading is removed.*

NOTE: *Bed overloading always has higher priority than HOLD/FREEZE and Taring functions.*

15.1.6 Bed Underload

If the bed is underloaded (factory zero – 11 lbs.):

- Both displays show the icon „Lo"

15.1.7 Weighing in tilt

The bed can be weighed in tilt. Accuracy is guaranteed by the spirit level, which is located at the head/foot of the bed. If the bubble is in the highlighted circle then weighing is accurate.

15.1.8 Hold Mode

Hold mode must be used only when the weights are stabilized. It allows attaching or removing bed accessories without changing the weight.

To activate hold mode:

- Wait 5 s until the weights are stabilized. The icon **3** will be illuminated when the weights are stabilized.
- Press button **5** for 2 s.
- The display shows „HOLD".
- Add or remove required accessories.

To deactivate hold mode:

- After adding or removing accessories wait 5 s, until the weight is stabilized on both displays. When the weight is stabilized the icon **3** is illuminated.
- Press button **5** for 2 s.
- Both displays shows the original weight.

To deactivate hold mode without saving the weight:

- Press button **7**.

15.1.9 Saving Weight of Patient

Button Save **9** allows saving one particular weight value of patient each day. Saved value will be displayed in subscreen history.

To save weight of patient:

First save of the day:

- Press button **9**.

Second (and all next) save of the day:

- Press button **9**.
- Confirm saving of the weight on the popup by pressing green tick

-or-

- Deny saving of the weight on the popup by pressing red cross.

15.1.10 Opening screen "Subscreen History"

Open subscreen history as follows:

- Press icon **1**

15.1.11 Subscreen History

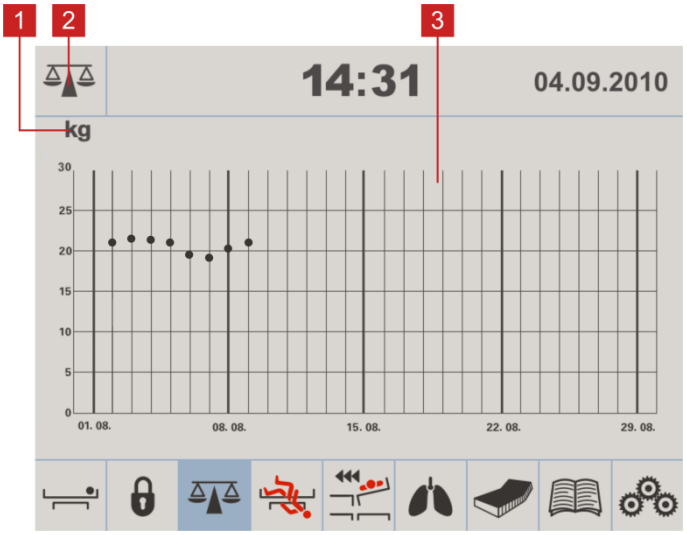


Fig. Subscreen History

1. Icon Weight Unit (kg / lbs)
2. Icon Screen Scales
3. Graph of Measuring History

To return to scales screen:

- Press icon 2.

16 i-Drive Power (optional)

16.1 i-Drive Power System - Basic Description

It is possible to equip the bed with the i-Drive Power wheel. The i-Drive Power helps hospital staff to drive the bed during patient transport with minimal manpower.
The i-Drive wheel is located in the center of the bed under the undercarriage. i-Drive Power is equipped with its own battery and charger and it is not dependent on the bed functions so, if discharged you can still use the bed functions.
The bed is equipped with one i-Drive controller. i-Drive is oriented in straight direction of the bed.

16.2 Safety instruction for i-Drive Power

- Follow the instructions carefully.
- Ensure that the bed is operated exclusively by qualified staff.
- Make sure the siderails are pulled up during the transport.
- Never use bed positioning buttons during transport.
- Never use Fast forward button when descending. The Fast forward button is recommended for use when ascending as it is more efficient.
- Special precaution need to be considered when reversing. Always keep distance from the bed and never use reverse button when descending or ascending.
- Do not use Free Drive to transport on a slope greater than 1 degree unless adequate personnel are available to manage safe bed transport.
- Never use the i-Drive Power to drive the bed up or down the slope that exceeds 6 degrees.
- Never leave the bed with an activated i-Drive Power system without supervision of the trained staff.
- Always use the regular mechanical brake system to brake and stabilize the bed.
- Pay increased attention when driving the bed using i-Drive Power. Be aware of people and objects in close proximity and avoid collision with them by careful driving, especially by appropriate speed control.
- Make sure the bed is unplugged and bed brakes are released before using i-Drive Power.
- Push the emergency stop drive button if immediate movement interruption is needed (e.g. to avoid collision with other persons or objects).
- Retract the i-Drive Power wheel to the undercarriage when parking. This will prevent misuse when unbraking and braking the bed.
- The i-Drive Power electromagnetic brake is designed just for temporary bed stop and not for the permanent parking.
- Switch off the i-Drive Power battery prior to long-term storage or transport (see chapter 6.1).
- Push the emergency retraction button under the chassis cover to retract the i-Drive Power wheel
- in case an of i- Drive Power system failure. This will enable moving the bed to a safe area manually without using i-Drive Power.
- Retract the i-Drive Power wheel to the undercarriage every time you intend to move the bed sideways.
- Pay attention to the LED battery status indicator and plan your drive using the i-Drive Power accordingly. Insufficient battery capacity can cause unexpected complications and risks during the drive.
- Always plug the bed in when you finish your drive in order to recharge the battery and keep your bed ready to go using the i-Drive Power.
- The i-Drive Power battery must be replaced every 2 years to maintain proper functions of the i-Drive Power.

16.3 Specifications of Use

WARNING!

Risk of injury due to careless driving!

- Always drive safely and carefully.
- Observe the path for any obstacles and avoid collisions.
- Ensure there are no people in your way.
- Manipulate with the bed carefully not to drive over any staff or patients.

Intended use:

- bed transport (with or without patient)

Unintended use:

- riding the bed
- other usage than described in user manual

NOTE *Each bed can transport only one patient at a time and cannot be used to transport other items (except bed*

accessories in secured position).

NOTE *For information concerning uses other than those outlined in the "Specifications of Use" section above, please contact Linet ®.*

16.4 Manipulation

CAUTION!

Damage to i-Drive Power main control panel cable due to wrong cable placement!

➲ Ensure that the main control panel connecting cable (**13**) is placed exactly as on the following picture.

CAUTION!

Material damage due to incorrect use!

➲ Do not hang anything on the main control panel and its cable!

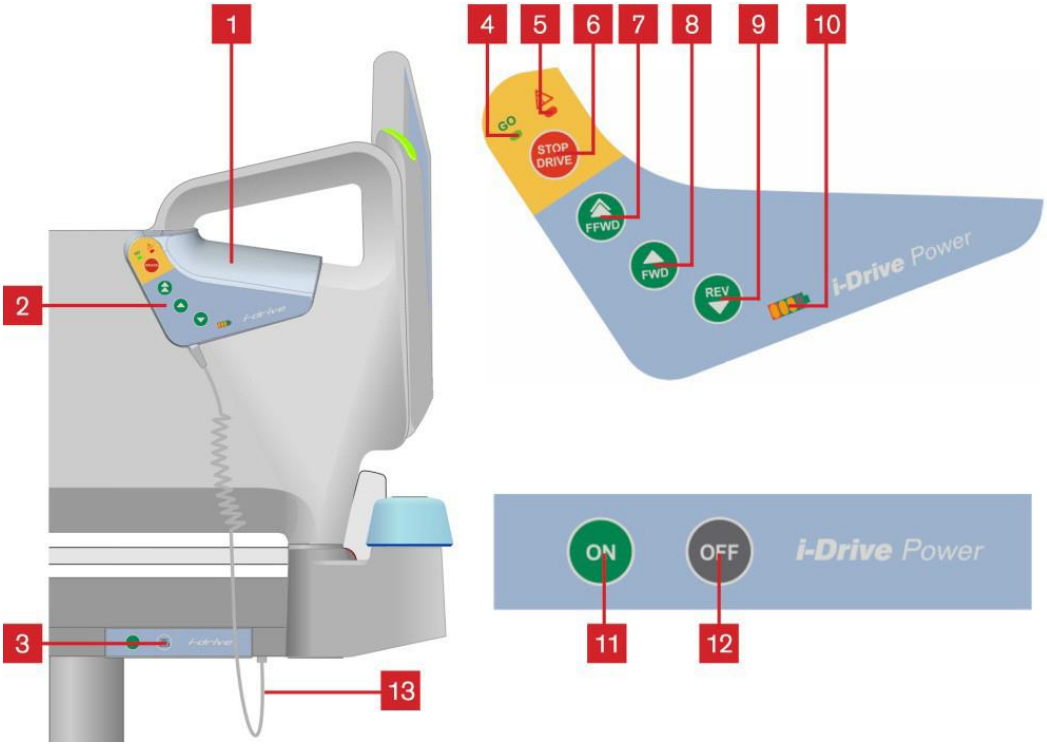


Fig. i-Drive Power controllers

Functions:

1. Safety Sense (touch sensor)
2. Main control panel
3. Activation panel
4. GO indicator
5. Fault indicator
6. Stop drive button
7. Fast forward button
8. Forward button
9. Reverse button
10. Battery status and fault indicator
11. i-Drive wheel Activation button
12. i-Drive wheel Retraction and Deactivation button
13. Main control panel cable – correct cable placement

NOTE *The i-Drive Power controller cannot control the bed functions. Control the bed using the bed control elements.*

NOTE *The main control panel is enhanced with a touch sensor (**1**); your hand must always be in contact with the i-Drive Power control panel to use the functions. If released, the i-Drive Power will stop.*

NOTE *Raising and lowering of the i-Drive wheel is electrically controlled by the i-Drive activation panel.*

16.4.1 Powered Drive

CAUTION!

Damage to property due to incorrect transport and involuntary movement!

- Prior to transport, ensure that the bed is disconnected from the mains.
- Prior to transport, ensure that the auxiliary outlet plug (if available) is disconnected from the mains.
- Ensure that the castors are locked prior to assembly, disassembly and maintenance (e.g.: i-Drive Power maintenance).
- Ensure that the castors are locked when the bed is occupied.
- Hang the mains cable on the appropriate hook on the bed during transport.

1. Check, if the mains switch of i-Drive Power is activated. (see chapter 17.4.3)
2. Press the ON (**11**) button on the Activation panel. The i-Drive wheel will lower and the GO indicator (**4**) will flash.
3. Place your hand on the Safety Sense touch sensor (**1**) and push the buttons **7** or **8** for forward motion, or **9** for reverse motion. Your hand must be placed on the Safety Sense sensor to use the i- Drive Power, if released, the i-Drive Power will stop.
4. The i-Drive motor is immediately stopped and the electric brake is activated after pressing the red stop drive button (**6**) when braking or in emergency.
5. i-Drive Power control system is automatically deactivated and the electric brake is activated if no i-Drive function is used for 3 minutes. This is signalized by the green indicator (**4**) which is extinguished after 3 minutes.

NOTE *Your hand must be placed on the Safety Sense panel to use the i-Drive Power.*

NOTE *i-Drive Power is not designed for ascending or descending a slope greater than 6° or longer than 65 ft, especially when loaded. The support of personnel is needed when ascending or descending with a full SWL.*

NOTE *The i-Drive wheel has an electromagnetic brake for emergency or normal stopping of the bed. When parking it is always necessary, for safety reasons, to use the bed brakes (see chapter: Castor control and bed transport) which will brake all four bed castors.*

NOTE *When i-Drive wheel is lowered, it is not possible to move the bed to the sideways. Press the OFF button to retract the wheel, release the castors to the neutral position and then move the bed to any direction required.*

16.4.2 Braking

1. Press and hold the stop drive button (**6**) to brake immediately.

-or-

2. Press and hold the reverse button (**9**) to brake slowly (Press the Forward button to brake when reversing)

-or-

3. Release your hand from the touch sensor area (**1**) and i-Drive Power will brake automatically.

NOTA *Always brake the bed when not transporting by using the castor control lever. The i-Drive brake is not designed to permanently brake the bed.*

NOTE *In a crisis situation (e.g. acceleration when driving down a steep slope) i-Drive dual braking prevents acceleration and slows down bed movement. However, it is not guaranteed the bed will stop by itself without personnel support (using stop drive button and castor control lever).*

NOTE *When descending, it is possible to actively brake using the opposite direction button to slow.*

16.4.3 i-Drive Power Activation/Deactivation

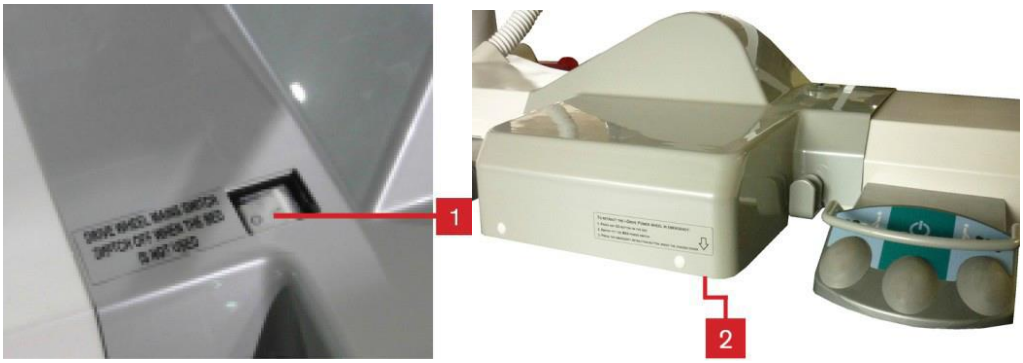


Fig. i-Drive Power mains switch

To activate the i-Drive Power:

1. Check, if the mains switch of i-Drive Power is activated (**1**).
2. Press the Activation button ON located on the activation panel. The i-Drive wheel will lower and the green indicator will flash.

To deactivate the i-Drive Power:

1. Retract the i-Drive wheel using the Retraction button located on the activation panel.
2. Deactivate the i-Drive using the mains switch (**1**).

Emergency i-Drive Power wheel retraction:

1. Press any GO button on the bed.
2. Deactivate the i-Drive using the mains switch (**1**).
3. Press the emergency retraction button (**2**).

NOTE *Use emergency retraction in case of battery discharge or drive malfunction to move the bed to a safe area manually without using i-Drive Power.*

16.4.4 Free Drive

The i-Drive motor is equipped with free drive, which is active after pressing the forwards (**7** or **8**) or backwards (**9**) buttons (until user holds the touch sensor area).
Free Drive is deactivated and the brake is activated when the direction of motion is changed. This is feature for lowering the risks when going to a slope.

16.5 Battery

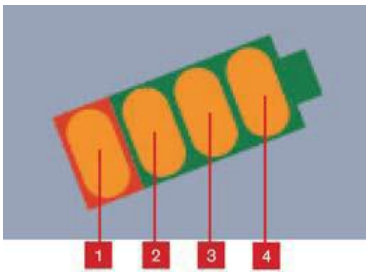


Fig. Battery indicator levels

Battery charge status:

1. While this indicator is flashing, the battery is critically discharged.
2. 50%
3. 75%
4. 100% - the battery is charged

To charge the battery:

- Connect the bed main cable to mains power.
- i-Drive will be charged (with the battery discharged, the charging may take up to 9 hours).

NOTE *Battery charge values are just informational. Battery life is reduced when the battery is allowed to discharge completely.*

16.6 Fault Signalization

The system is protected against failure states, by stopping and braking the drive system, and respective signalization. The fault indicator flashing briefly and the battery indicator shows the fault state. Some defects are cleared automatically (e.g.: drive overheating).

Error	LED1	LED2	LED3	LED4
Drive overheated*	Off	Off	Off	On
Electronics overheated*	Off	Off	On	Off
Brake error	Off	Off	On	On
Retraction not completed	Off	On	Off	Off
5V off limits	Off	On	Off	On
FETclosingpenetrated	Off	On	On	Off
Control circuit overheated	Off	On	On	On
Controlcircuiterror	On	Off	Off	Off
Activation button stuck	On	Off	Off	On
Retraction button stuck	On	Off	On	Off
Activebuttonafterstart	On	Off	On	On
** An acoustic signal occurs before the drive is blocked (short acoustic signalization)* ***NOTE*** *LED indicators are numbered from theleft*				

16.7 Light Indicators

Indicator	Meaning
Go Indicator	
▪ Constantly lit	Hand is on touch sensor; drive wheel is ready for use.
▪ Flashing	Hand is not on touch sensor; i-Drive is not ready for use.
Fault Indicator	
▪ Constantly lit	i-Drive cannot be activated (i-Drive wheel is not lowered, castor control lever is braked, bed is connected to the mains).
▪ Flashing	System is faulty (indicated on battery status indicator, see service manual) -or- i-Drive control box heat protection is activated

16.8 Technical Specifications

Specification	Value
i-Drive wheel diameter	8,27 in.
Max. fast forward speed (flat ground, loaded)	2.75 MPH (±15%)
Max. forward speed (flat ground, loaded)	1.34 MPH (±15%)
Max. reverse speed (flat ground, loaded)	1.34 MPH (±15%)
Max. angle of ascent	6°
Noise level (when retracting the drive wheel)	65 dB

16.9 Electrical specification

Specification	Value
Battery Voltage	36 V DC, Capacity: 12 Ah
Maximum Power Input	300 W
Fuse Accumulator fuse	pipe fuse T 3.15 A MDP 030 (30 A)

16.10 I-Drive Power Maintenance

Periodical maintenance of the i-Drive Power must be done by qualified service technician or authorized service organization at least once a year.

Service technician must check the following:

- battery status and eventual replacement of batteries (after maximum of three years of duty)
- gas spring – replace if necessary (after maximum of three years of duty)
- i-Drive Power wheel – replace if necessary
- lifting mechanism – grease if necessary
- cables, control elements – replace if necessary
- i-Drive Power function

NOTE *To continue maintenance please see chapter Maintenance.*

17 X-Ray Lung Examination

Fig. X-Ray Lung Examination

The backrest of the bed consists of HPL and is x-ray translucent. The bed is equipped with an x-ray cassette hol- der with 2 U-profiles under the backrest. This design allows taking x-ray images of the patient's lungs without moving the patient manually.

17.1 Necessary Steps before the Examination

NOTE *This procedure is suitable for patients who cannot be moved due to critical conditions (e. g. internal bleeding).*

- Make sure that patient is in centre of bed.
- Make sure that backrest is in lowest position and siderails are folded up.
- Pull out x-ray cassette holder.
- Insert x-ray cassette (format 16.93 in. x 13.78 in).
- Push back x-ray cassette holder with x-ray cassette so that the cassette centre indicator is exactly under the edge of the mattress platform.
- Correct position of x-ray cassette holder using the tooth mechanism so that the upper edge of the x-ray cassette is exactly under the patient's shoulder line.
- Adjust parameters of the x-ray device.

18 Examination with C-arm

Backrest and seat of the bed are x-ray translucent. The bed is equipped with a column construction. This design allows C-arm-assisted operations (mainly cardiological operations such as temporary external cardiostimulation) without moving the patient. The x-ray tube of the C-arm is located between the undercarriage and the mattress platform.

18.1 Necessary Steps before the Operation

- Make sure that backrest is in highest position and siderails are folded up.
- Position upper part of C-arm (sensor and indicator) above the patient's chest.

19 Cleaning/Disinfection

Antibacterial surface finish:
Selected parts of the Multicare bed are treated against the spread of bacteria with certified technology by Sanitized®. This technology supplements regular bed disinfection procedures. Regular bed cleaning cannot be omitted relying only on the antibacterial surface finish. Clean the bed according to the following instructions.

WARNING!

Risk of injury due to accidental bed movement!

- Always disable the function buttons when cleaning between the undercarriage and mattress platform.

CAUTION!

Material damage due to incorrect cleaning/disinfection!

- Do not use washing machines.
- Do not use pressure or steam cleaners.
- Exclusively use the recommended cleaning agents.
- Follow the instructions and observe the dosages recommended by the manufacturer.
- Ensure that disinfectants are selected and applied exclusively by qualified hygiene experts.

For safe and gentle cleaning:

- Do not use any strong acids or bases (optimum pH range 6 - 8).
- Exclusively use detergents that are suitable for cleaning medical equipment.
- Do not use abrasive powders, steel wool, or other materials and cleaning agents that might damage the mattress replacement system.
- Never use any corrosive or caustic detergents.
- Never use detergents that deposit calcium carbonate.
- Never use detergents with solvents that might affect the structure and consistency of the plastics (benzene, toluene, acetone, etc.).
- Clean electrical components carefully and allow them to dry completely.
- Do not immerse SCU in water or steam-clean it.
- Observe local directives regarding infection control.
- Make sure any cleaning agent used is approved by:
  - the facility in which the mattress replacement system is to be used.
  - by the EPA (Environmental Protection Agency) of the country in which the mattress replacement system is to be used.

Linet ® recommends the following cleaning agents:

Parts to be cleaned	Cleaning agents
Multicare hospital bed	■ Mikrozid, Terralin Protect, Thermosept (Schülke & Mayr) ■ Bacillol AF, Bacillol Rasant, Dismozon Pur, Microbac Forte, Neodisher Dekonta (BODE Chemie) ■ Lysoformin 3000, Lysoform Spezial (LYSOFORM) ■ Incidin plus, Incidin rapid (Ecolab) ■ Perform, TPH protect (Schülke)
Mattress cover base, comforter covers, air cells, foam base, SCU	■ standard hospital detergents ■ alcohol or chlor based desinfections
Mattress cover top	■ standard hospital detergents ■ alcohol and quaternary ammonium-based disinfectants

19.1 Cleaning (Multicare)

Prepare for cleaning as follows:

- Put the mattress platform in the highest position.
- Adjust the back and thigh rests so that the reverse sides are accessible.
- Disable the function buttons on the control elements using the supervisor panel.
- Disable the foot controls using the supervisor panel.
- Disconnect the bed from the mains.
- Move the bed to the location where it will be cleaned.
- Lock the brakes on the bed.

19.1.1 Daily Cleaning

Clean the following bed parts:

- All control elements for adjusting the bed
- All handles
  - CPR release handle
- Bed ends
- Siderails (in highest position)
- Freely accessible mattress surface
- Mobi-Lift®
- Accessory rails

19.1.2 Cleaning before Changing Patients

Clean the following bed parts:

- All control elements for adjusting the bed
- All handles
  - CPR release handle
- Bed ends
- Siderails (in highest position)
- Freely accessible mattress surface
- Mobi-Lift®
- Accessory rails
- All plastic mattress platform covers
- Plastic undercarriage covers
- Telescopic columns
- Mattress on all sides
- Freely accessible metal parts of mattress platform
- Cable ducts
- Lifting pole sleeve fitting
- Infusion stand sleeve fitting
- Bumpers
- Castors
- Brakes

19.1.3 Complete Cleaning and Disinfection

Clean the following bed parts:

- All control elements for adjusting the bed
- All handles
  - CPR release handle
- Bed ends
- Siderails (in highest position)
- Freely accessible mattress surface
- Mobi-Lift®
- Accessory rails
- All plastic mattress platform covers
- Plastic undercarriage covers
- Telescopic columns
- Mattress on all sides
- Freely accessible metal parts of mattress platform
- Cable ducts
- Lifting pole sleeve fitting
- Infusion stand sleeve fitting

- Bumpers
- Castors
- Brakes
- Interior parts
- (accessible after removing mattress platform covers)

19.2 Cleaning (OptiCare and Symbioso)

19.2.1 General guidance – Standard Cover

- Do not use any strong acids or alkalines, (optimum pH range 6 – 8. Do not exceed pH of 9). Some hard surface cleaners have pH values outside this range, these are not suitable for use on coated textiles.
- Only use detergents that are suitable for cleaning medical equipment and for use on coated textiles.
- Do not use abrasive powders, steel wool, or other material and cleaning agents that might damage the mattress. Do not scrub mattress surface.
- Never use any corrosive or caustic detergents.
- Never use detergents that deposit calcium carbonate.
- Never use detergents with solvents that might affect the structure and consistency of the plastics (benzene, toluene, acetone, phenol, etc.).
- Use only hospital-approved cleaners and observe local directives concerning infection control.
- Always rinse with water after cleaning and dry thoroughly before use.

Mattress parts to be cleaned	Recommended Cleaning Agents (General cleaning)
Top Cover *High MVP (Moisture Vapor Permeable) Material.*	Standard hospital detergents, Alcohol or Quaternary Ammonium based disinfectants, Chlorine based disinfectants containing up to 1000 ppm Chlorine, followed by rinsing with water and drying thoroughly before use.
	Decontamination: Blood spills/C-diff. etc
	Chlorine based disinfectants containing up to 10,000 ppm Chlorine. Dwell time on surface at 10,000 ppm of 2 minutes, followed by rinsing with water and drying thoroughly before use.
Base Cover, Air Cells, Foam Base	As procedures above.

Due to the variety of laundry equipment, chemicals and conditions in use, customers should satisfy themselves through pre-testing. It is essential that articles be thoroughly rinsed and dried after all cleaning procedures and before storage or reuse. Wet or damp PU surfaces are more prone to mechanical damage than when dry.

As stated above, after application of a suitable cleaner, the surface must be rinsed with water and dried before use. (Even if the cleaner instructions say that this is not required). This prevents a build up of chemicals on the mattress surface which could be reactivated during use and affect biocompatibility. The High MVP Coating may swell and change appearance during cleaning. This will recover after being thoroughly dried.

NOTE: *Continued use of high concentration, chlorine-based disinfectants may significantly reduce the performance and the working life of a coated material.*

Type of Cleaning	Parts to be cleaned
Routine Cleaning and Disinfection	▪ exposed mattress parts ▪ exposed SCU parts
Full Cleaning and Disinfection	▪ exposed mattress parts ▪ exposed SCU parts ▪ internal parts of mattress ▪ internal parts of cover

19.2.2 Routine Cleaning and Disinfection

Cleaning the mattress:

- Check mattress cover top for any signs of damage.
  Replace or repair and completely disinfect mattress cover top if damaged.
- Check inside of mattress cover top for signs of liquid ingress.
  Replace or clean and completely disinfect mattress cover top if damp inside.
- Leave mattress cover on mattress.
- Clean with 140 °F warm water and cleaning detergent.
- Rinse mattress with cold water.
- Let mattress dry or wipe dry.
- Wipe mattress with disinfectant.
- Rinse mattress with cold water.
- Let mattress dry or wipe dry.

Cleaning the SCU:

- Wipe SCU with disinfectant.
- Let SCU dry or wipe dry.

19.2.3 Full Cleaning and Disinfection

Cleaning the mattress:

- Deflate mattress and remove cover (see Removing the Mattress Cover).
- Check mattress cover top and base for any signs of damage.
  Replace or repair and completely disinfect mattress cover top and base if damaged.
- Check mattress cover top and base for signs of liquid ingress.
  Replace or clean and completely disinfect mattress cover top and base if damp inside.
- Clean all mattress cells and pipes with 140 °F warm water and cleaning detergent.
- Rinse mattress with cold water.
- Let mattress dry air dry or wipe dry.
- Wipe mattress with disinfectant.
- Rinse mattress with cold water.
- Let mattress dry air dry or wipe dry.

Cleaning the mattress cover:

- Remove cover (see Removing the Mattress Cover).
- If machine washing mattress top/base covers, the temperature should be raised during the wash cycle, to 65°C/149°F, for 10 -15 minutes, or 71°C/160° F, for 3 - 10 minutes, using hospital approved detergents and rinsing agents. (Note: maximum wash temperature 75°C/167°F).
- Dry cover in tumble dryer at low temperature.

Cleaning the air pipe:

- Wipe air pipe with cleaning agent or disinfectant.
- Let air pipe dry.

Cleaning the SCU:

- Remove filter.
- Wipe SCU and filter with disinfectant.
- Let SCU and filter dry.
- Reinsert filter.

19.3 Removing the Mattress Cover

- Carefully open zipper under side skirt of mattress cover on foot end of mattress.
- Remove top part of mattress cover.
- Undo corner toggles holding comforter cover and remove comforter cover.
  Inspect comforter cover and clean if necessary.
- Undo toggles holding top deck to foam base.
- Undo plastic clip next to air pipe inlet on base cover holding foam base to cover.
- Remove bottom part of mattress cover.

After cleaning the mattress cover:

- Reinstall mattress cover by reversing the process described above.
- Make sure all toggles are put back in their respective holes.

19.3.1 General guidance – Slippy Cover

WARRANTY: *Due to the nature and MVP (Moisture Vapor Permeability) rating of the Slippy Cover Material, the Warranty is 1 year. Chemical damage caused by using aggressive or incorrect cleaners will not be accepted under the warranty*

LIFESPAN: *Typically 50 cleaning cycles in accordance with manufacturers' instructions.*

- Do not use any strong acids or alkalines, (optimum pH range 6 – 8. Do not exceed pH of 9).
- Use only hospital-approved cleaners suitable for use on coated textiles and observe local directives concerning infection control.
- Do not use abrasive powders, steel wool, or other material and cleaning agents that might damage the mattress. Do not scrub mattress surface. Do not allow mechanical damage to occur, (e.g. Needle stick, scalpel/scissors cuts).
- Never use any corrosive or caustic detergents. Do not use cleaners containing Peroxide.
- Never use detergents that deposit calcium carbonate.
- Never use detergents with solvents that might affect the structure and consistency of the plastics (benzene, toluene, acetone, phenol, etc.).
- Use only hospital-approved cleaners and observe local directives concerning infection control.
- Always rinse with water after cleaning and dry thoroughly before use.
- Always refer to wash label and user guide for each system, as there may be specific instructions for the cover being used.

Mattress parts to be cleaned	Recommended Cleaning Agents (General cleaning)
Top Cover *High MVP (Moisture Vapor Permeable) Material* *Slippy Mattress Cover Top*	Standard hospital detergents or cleaners suitable for use on coated textiles, as described above. Chlorine based disinfectants containing up to 1000 ppm (0.1%) available Chlorine, followed by rinsing with water and drying thoroughly before use.
	Decontamination: Blood spills/C-diff. etc
	Chlorine based wipes containing up to 5500 ppm (0.55%) available Chlorine (e.g. Clinell Clorox wipes). Dwell time on surface at 5500 ppm of 3 minutes, followed by rinsing with water and drying thoroughly before use.

Due to the variety of laundry equipment, chemicals and conditions in use, it is the customers' responsibility to ensure compliance with manufacturers detailed cleaning instructions.

As stated above, after application of a suitable cleaner and after a suitable dwell time, it is essential that articles be thoroughly rinsed and dried before use. (Even if the cleaner instructions say that this is not required). This prevents a build up of chemicals on the mattress surface which could be reactivated during use and affect biocompatibility. Wet or damp PU (Polyurethane) surfaces are more prone to mechanical damage than when dry. The High MVP Coating may swell and change appearance during cleaning. This will recover after being thoroughly dried. (Air dry. Do not wipe aggressively). Before further use, the cover must be fully dry.

19.3.2 Machine Washing Symbioso Hi-MVP Slippy Mattress Cover

Machine wash top cover using hospital approved, detergent & rinsing agents. The detergent must not contain chlorine based bleach or peroxide. In order to kill bacteria, during the wash cycle the water temperature must be raised to 71 degrees C (160 degrees F) for 3 minutes, or 10 minutes at 65 degrees C (149 degrees F). Dry cover in tumble dryer at low temperature setting.

NOTE: *Constant use of high concentrations of Chlorine-based cleaners, or high PH value cleaners, may significantly reduce the performance and the working life of a coated material.*

NOTE: *Covers that have physical damage that would allow fluids to penetrate inside the mattress cover must not be re-used but disposed of as clinical waste.*

NOTE: *On High Vapour Permeable covers, vapour from chemicals with small molecules can occasionally diffuse through the polyurethane membrane in a similar manner to water vapour. Any staining on the inside of the cover caused by such an occurrence is not due to any loss of liquid / microbial barrier properties of the fabric, and being cosmetic only, should not be treated as a cover failure as replacement is not required.*

20 Troubleshooting

DANGER!

Risk of mortal injury due to electric shock!

- If a fault occurs, have the electric motor, power box or other electrical parts repaired by qualified personnel exclusively.
- Do not open the protective covers of the electric motor or the power box.

Error/Fault	Cause	Solution
Adjusting with position buttons not possible	GO button was not pressed	Press the GO button.
	Function disabled on supervisor panel	Enable disabled function.
	Actuators have no power, Defective actuators, Defective battery	Check the mains connection. Notify the service department.
	Plug inserted incorrectly	Insert the mains plug correctly.
	Faulty power source.	Notify the service department.
	Faulty control element	Notify the service department.
Faulty mattress platform height/tilt adjustment	There is an object on the undercarriage cover	Remove the object.
	Function disabled on supervisor panel	Enable disabled function.
	Actuators have no power, Defective actuators, Defective battery	Check the mains connection. Notify the service department.
	Plug inserted incorrectly	Insert the mains plug correctly.
	Faulty power source	Notify the service department.
	Faulty control element	Notify the service department.
Lowering backrest from the upright position not possible	Obstacle under the backrest or in the drive mechanism	Remove the object.
	Locking handle is defective	Notify the service department.
Adjusting siderails not possible	Obstacle in the siderail lock	Clean the locking mechanism.
	Locking handle is defective	Notify the service department.
Faulty brakes	Obstacle blocking brakes mechanically	Clean the brake system.
	The brake mechanism is defective	Notify the service department.

21 Maintenance

WARNING!

Risk of injury when working on the bed!

- ➲ Ensure that the bed is disconnected from the mains connection prior to assembly, disassembly and maintenance.
- ➲ Ensure that the castors are locked prior to assembly, disassembly and maintenance.

WARNING!

Risk of injury due to defective bed!

- ➲ Have a defective bed repaired immediately.
- ➲ If the defect cannot be repaired, do not use the bed.

CAUTION!

Material damage due to incorrect maintenance!

- ➲ Ensure that maintenance is performed exclusively by seller´s customer service or trained hospital technicians.
- ➲ If the defect cannot be repaired, do not use the bed.

NOTE *Linet ® recommends attaching the maintenance plaque to the bed.*

To keep the bed functioning correctly, ensure that the following maintenance work is performed at the correct intervals.

21.1 Maintenance every 12 months

Please refer to the Linet Periodic Preventative Maintenance and Safety Check Manual.

21.1.1 Spare Parts

The product label is located on the inside of the longitudinal rail of the mattress platform frame. The product label contains information for claims and ordering replacement parts.

Information about spare parts is available from:

- Seller´s customer service
- Sales
- Our technical support department

21.1.2 Completeness

- ❖ Perform a visual check (with delivery note if necessary).
- ❖ Have any missing parts replaced.

21.1.3 Wear

- ❖ Check all bolts and tighten if necessary.
- ❖ Check all locking mechanisms.
- ❖ Check the bed for wear, scratches or rub marks.
  Eliminate the cause if necessary.
- ❖ Have any defective parts replaced.

21.1.4 Functioning

- Check that all bed adjustments reach the maximum position.
- If necessary, clean, lubricate or replace any worn spots and parts.

21.1.5 Electric Control

Plug connections:

- Replace O-rings on connectors.
- Check plugs connections for dirt and defects.
  Clean or replace if necessary.
- Check that the plug connectors are properly seated.

Motors:

- Check motor movement (adjust bed positions).
  Check for incorrect and interrupted movements.
  Have defective motors replaced if necessary.
- Check cables for signs of wear and entanglement.
  Install a new cable or have it replaced if necessary.

Battery:

- Check that the battery is working properly (disconnect the bed from the mains).
  Have the battery replaced if necessary.

Fuses:

- Have fuses changed exclusively by qualified and trained service technicians authorised by the manufacturer.
- Use the following fuse types exclusively:
  - T2A (for 230 V input)
  - T4A (for 100 – 127 V input)

21.1.6 Castors

- Clean the castors completely.
- Grease the castors if necessary (Caro EP 2 by DEA or an equivalent grease).
- Check that the castors work properly.
  - Forward Movement
  - Unrestricted Movement
  - Braked
- Have the brakes adjusted if necessary.
- Have any defective castors replaced.

21.1.7 Accessories

- Check that all accessories (for example, lifting pole, siderails, infusion stand, etc.) are working properly.
- Replace if necessary.

21.2 Safety Checks

WARNING!

Risk of injury due to incorrect safety checks!

- ➲ Ensure that safety checks are performed exclusively by seller´s customer service or autho- rised personnel (certified by the manufacturer).
- ➲ Ensure that the safety checks are recorded in the service and maintenance log.

WARNING!

Risk of injury due to defective bed!

- ➲ Have a defective bed repaired immediately.
- ➲ If the defect cannot be repaired, do not continue to use the bed.

In accordance with the §6 of the Medical Devices Operator Ordinance, the operator is required to perform a technical safety check on the hospital bed every 12 months.

NOTE *On request, the manufacturer will provide circuit diagrams, component part lists, descriptions, calibration instructions etc. for service personnel for the repair of ME equipment designated by the manufacturer as repairable by service personnel.*

21.3 Maintenance OptiCare and Symbioso

Check the following at least every 12 months:

- ❖ Check inside and outside of mattress and outside of SCU for mechanical damage and signs of severe wear and tear.
- ❖ Check if mattress and SCU are fully operational.
- ❖ Perform electrical safety checks in accordance with local safety regulations.

Check the following every month:

- ❖ Check external air filter in side of SCU for dust and dirt.
  If dust or dirt is visible, replace filter.
- ❖ Replace any damaged parts immediately with original spare parts.
- ❖ Ensure that maintenance and installation are performed exclusively by qualified personnel trained by the manufacturer.

NOTE *Linet ® provides service documentation for qualified personnel.*

The service technician approved by manufacturer is required to perform a technical safety check on the mattress every 12 months.

21.4 Linet ® Service

Our responsible Linet ® Service partners will ensure your Linet ® products are up and running when you need them. For more information on available service support and contract offerings, please contact us at 877-815-8895 and ask for technical support. Linet ®'s nationwide network of highly skilled service providers that are equipped to service and maintain your Linet ® equipment at the highest level.

22 Storage

22.1 OptiCare

When SCU is not in use:

- Cancel icon Mattress Unavailable in touchscreen (see Transport Mode/Power Failure):
- Go to Settings menu on touchscreen and select Mattress Off.
- Unplug mains cable.

When mattress is not in use:

- Unclip all 5 air pipes.
- Undo webbing strap next to air pipes.
- Make sure mattress has been cleaned and is completely dry inside and out (see Cleaning/Disinfection).
- Deflate mattress and leave air connector open (CPR position).
- Roll mattress up carefully to get air out completely.
- Place mattress in storage bag.

Store in a dry and safe place and keep away from sharp objects.

22.2 Symbioso

When SCU is not in use:

- Switch off SCU using green illuminated power switch on side of SCU.
- Cancel icon Mattress Unavailable in touchscreen (see Transport Mode/Power Failure):
- Go to Settings menu on touchscreen and select Mattress Off.
- Unplug mains cable.

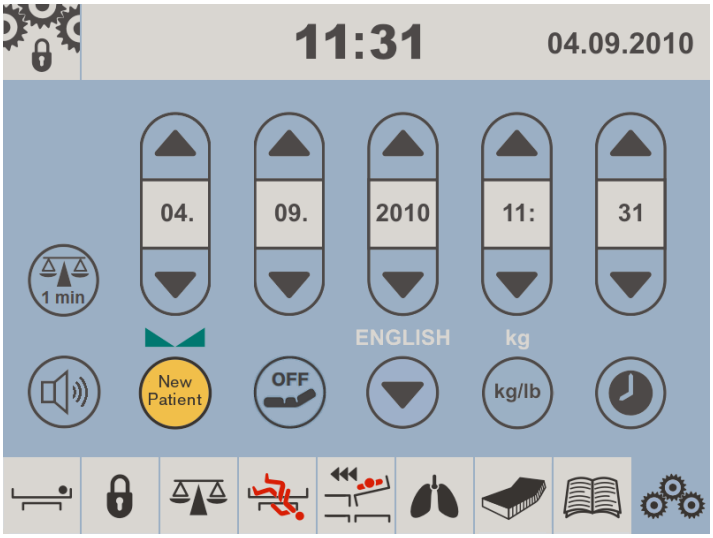


Fig. Settings Menu

When mattress is not in use:

- Unclip all 4 air pipes.
- Undo webbing strap next to air pipes.
- Put air blanking plugs to SCU air outlets.
- Make sure mattress has been cleaned and is completely dry inside and out (see Cleaning/Disinfection).
- Deflate mattress and leave air connector open (CPR position).
- Roll mattress up carefully to get air out completely.
- Place mattress in storage bag.
- Store in a dry and safe place and keep away from sharp objects.

23 Disposal

23.1 Environment Protection

Linet ® is aware of the important role that the protection of our environment plays for future generations.
The materials of this product are environmentally compatible. It does not contain hazardous substances on the basis of cadmium, mercury, asbestos, PCB or CFC. The noise emission and the vibrations meet the directives for premises. None of the wooden parts are made of tropical woods (for example, mahogany, jacaranda, ebony, teak, etc.) or of woods from the Amazonian region or similar rainforests.
The packaging materials are produced according to the respective directives. Dispose of the packaging material according to the symbols and by delivering it to an authorised person.
The product consists of recyclable steel, plastic and electronic components.



23.2 Disposal

The materials of the appliance are reusable. By reusing, material recycling or other forms of use of old appliances you give an important contribution to the protection of our environment.

- Ask the responsible environmental protection authorities for the appropriate disposal point.
- Observe local and country-specific specifications for disposal.

23.2.1 Multicare

Outside Europe

- Dispose of the bed or its components in accordance with local laws and regulations:
  - After using the bed
  - Following maintenance and installation work
- Hire an approved waste disposal company for disposal.

23.2.2 OptiCare and Symbioso

To dispose of the appliance (SCU):

- When you dispose of your appliance (SCU) do not put it into the household waste.
- Send the appliance (SCU) to the recycling of electrical appliances.

24 Warranty

Linet ® will only be held responsible for the safety and reliability of products that are regularly serviced and used in accordance with the safety guidelines. Consult the warranty provided for your country.

Should a serious defect arise that cannot be repaired during maintenance:

- Do not continue to use the bed.

25 Technical Specification

All technical data are rated data and are subject to construction and manufacturing tolerances.

25.1 Accuracy of displayed values

Weight (integrated scales):

- 1,1 lbs

Tilt angle:

- +/-3°

25.2 Mechanical Specifications (Multicare)

Dimensions (With Folded-up Siderail)	215 cm x 105 cm
Bed Extension	0 cm - 22 cm
Recommended Mattress Dimensions	208 cm x 86 cm
Maximum Mattress Height	23 cm
Bed Height	44 cm - 82 cm
Siderail length Head section Central section	 54 cm 100 cm
Castor (Diameter)	15 cm
Maximum Backrest Angle	70°
Maximum Thighrest Angle	30°
Maximum Calfrest Angle	38°
Maximum Lateral Tilt Angle	30°
Trendelenburg	13°
Anti-Trendelenburg Position	16°
Siderail Height (above Mattress Platform)	45 cm
Bed Weight (Basic Equipment)	224 kg
Safe Working Load	250 kg
Maximum Lifting Pole Load	75 kg
Maximum Patient Weight Application environment 1, 2 Application environment 3, 5	 185 kg 215 kg
Environmental conditions - Operation ▪ Temperature ▪ Humidity ▪ Atmospheric Pressure Environmental conditions - Storage and Transport ▪ Temperature ▪ Humidity ▪ Atmospheric Pressure	 10°C - 40°C 30% – 75% 795 hPa – 1060 hPa -20°C - 50°C 20% - 90% (non-condensing) 795 hPa - 1060 hPa

** In case the accessories and mattress weights more than 50lbs then it is necessary to deduct complete weight of accessories and mattress from SWL to recalculate new maximum weight of patient. To check complete weight of accessories and mattress use bed scales system.*

25.3 Mechanical Specifications (OptiCare)

Dimensions ▪ Mattress (inflated) ▪ SCU	 214 cm x 86 cm x 22 cm 36 cm x 22 cm x 10 cm
Weight ▪ Mattress (inflated) ▪ SCU	 10 kg (22 lbs) 6 kg (13.1 lbs)
Inflation time after storage CPR deflation time (depending on patient weight, chosen mode: optimization or maximum internal pressure, type of CPR: electric or manual)	max. 15 min (typical < 10 min) max. 30 s
Environmental conditions - Operation ▪ Temperature ▪ Humidity ▪ Atmospheric Pressure Environmental conditions - Storage and Transport ▪ Temperature ▪ Humidity ▪ Atmospheric Pressure	 10°C - 40°C 30% – 75% 70 kPa – 106 kPa -40°C - 70°C 10% - 100% (non-condensing) 50 kPa - 106 kPa
Max. mattress load	250 kg/550 lbs/39 stone
Min. mattress load	40 kg
Remain Inflated in Transport Mode	2 hours (when starting from Max Inflate Mode)
Noise level	NC30 (suitable for use in quiet domestic environment) max. 45 dBa (normal operation without alarm)

25.4 Mechanical Specifications (Symbioso 250)

Dimensions ▪ Mattress (inflated) ▪ SCU	 80.31 in. x 34.64 in. x 9.05 in. 14.17 in. x 8.66 in. x 3.93 in.
Weight ▪ Mattress (inflated) ▪ SCU	 20,9 lbs 7,7 lbs
Inflation time after storage CPR deflation time	15 min max. 30 s (electric or manual)
Environmental conditions - Operation ▪ Temperature ▪ Humidity ▪ Atmospheric Pressure Environmental conditions - Storage and Transport ▪ Temperature ▪ Humidity ▪ Atmospheric Pressure	 10°C - 40°C 30% – 75% 70 kPa – 106 kPa -40°C - 70°C 10% - 100% (non-condensing) 70 kPa - 106 kPa
Max. mattress load	250 kg/550 lbs/39 stone
Remains inflated in Transport Mode for	min. 24 hours (when starting from Max Inflate Mode)
Noise level	NC30 (suitable for use in quiet domestic environment) max. 45 dBa (normal operation without alarm)

25.5 Electrical Specifications (Multicare)

Input Voltage	120 V~, 50/60 Hz
Maximum Power Input	max. 370 VA
Ingress Protection	IP X4
Protection Class Applied parts	Class I Type B
Electrical Motor Duty Cycle	max. 2 min ON / 18 min OFF
Battery Fuse	Pb ACCU 2 x 12 V / 1,2 Ah / Fuse 15A 2x T3.15A L 250 V for 100-127 V version

25.6 Electrical Specifications (OptiCare)

Supply voltage, Frequency	100/127 V~, 50/60 Hz (Model 110V)
Power Rating	max. 40 VA (when operating from mains supply)
DIN EN 60529 Safety Protection	IP44
Fuse	2x T1A Anti-surge Fuse
Electrical safety class	Class 1 with applied parts type B
Electrical safety	In conformity with BSEN 60601-1

25.7 Electrical Specifications (Symbioso 250)

Supply voltage	110 - 127 V~, ±10%, 50/60 Hz
Nominal power	max. 40 VA (when operating from mains supply)
Fuse	2x T1AH anti-surge fuse
Electrical safety class	Class 1 with applied parts type B
Electrical safety	In conformity with EN 60601-1

NOTE *Upon request, Linet ® can deliver hospital beds with electrical specifications that comply with regional standards (custom voltage, different mains plugs).*

Identification of applied parts (Type B)

- mattress platform frame, covers and all movable parts
- head and foot end
- siderails
- Mobilift handles
- handset

ERGOFRAME

Ergroframe is a kinematic solution of the backrest and thighrest positioning that extends the space in the pelvic area through location of the pivoting points above the platform level. Ergoframe minimalises the pressure on patient´s abdomen and pelvic area and frictional forces on the patient‘s back and legs, thereby significantly reducing the risk of pressure sores. Ergoframe maintains a stable ergonomic position of the body and spine of the patient, thus limiting unwanted movement of the patient by moving down or up in beds. Unified movement eliminates the patient's shift over the mattress and thus maintains a uniform position of the patient's body that is not bound to the position of the bed parts.

25.8 Electromagnetic Compatibility

⚠ WARNING!

Increased electromagnetic radiation or reduced electromagnetic resistance due to unsuitable accessories, converters or cables!

➲ Consult Linet® or local dealer before using other parts than those provided by Linet®.

⚠ WARNING!

Medical electrical equipment or medical electrical system should not be used in extremely short distances within the bed! In the case it is necessary to use medical electrical equipment in this extremely short distances within the bed observe this configuration regularly to verify the normal functions of the bed in this configuration.

➲ Consult Linet® or local dealer before using medical electrical equipment where influence on the bed can be strong.

NOTE *IEC 60601-1-2 certified medical electrical equipment used in ICU is not restricted.*

Multicare requires special preliminary measures pertaining to EMC that necessitate installation and commissioning in conformity with the EMC information given in this Manual.

Portable and mobile HF communication equipment can influence bed functions.

NOTE *It does not concern fixed installations of hospital communication systems and nets (DECT, pager, WiFi) and other mobile devices which are certified according to local telecommunication legislation.*

25.8.1 Manufacturer's Manual and Declaration - Electromagnetic Radiation

Multicare is intended for the application in electromagnetic environment as specified below. The customer or user of the bed is responsible for the fact that these requirements are met.

Radiation Test	Conformity	Electromagnetic Environment
High-frequency radiation CISPR 11	Group 1	Multicare utilises high-frequency energy for its internal function only. The high-frequency radiations are very low and unlikely to cause any interference to nearby electronic devices
High-frequency radiation CISPR 11	Class B	Multicare is suitable for all institutions, including households and objects directly connected to the public low-voltage mains supplying residential buildings
Harmonic radiations IEC 61000-3-2	Class A	
Fluctuating voltage/Flashing radia- tion CE 61000-3-3	Satisfactory	

25.9 Manufacturer's Manual and Declaration - Electromagnetic Resistance

Multicare is intended for the application in electromagnetic environment as specified below. The customer or user of the bed is responsible for the fact that these requirements are met.

Resistance Test	Test Level as per IEC 60601	Level of Compliance	Electromagnetic Environment
Electrostatic discharge (ESD) IEC 61000-4-2	± 6 kV for contact ± 8 kV for air	± 6 kV for contact ± 8 kV for air	❖ Ensure that the following requirements are met: Floors: wood, concrete or ceramic tiles Relative humidity: >30%
Electrical fast transient response/ group of impulses IEC 61000-4-4	± 2 kV in feeder line ± 1 kV in input/output line	± 2 kV in feeder line ± 1 kV in input/output line	❖ Ensure the mains quality is suitable for a commercial or hospital environment.
Shock pulse IEC 61000-4-5	± 1 kV between lines ± 2 kV between line (lines) and earth	± 1 kV in differential mode ± 2 kV in co-phasal mode	❖ Ensure the mains quality is suitable for commercial or hospital environment.
Short-time voltage drop, short-duration interruptions and slow voltage changes on the feeder input line IEC 61000-4-11	<5 % U_T (>95 % short-duration drop of U_T) within 0.5 cycles 40 % U_T (60 % short-duration drop of U_T) within 5 cycles 70 % U_T (30 % short-duration drop of U_T) within 25 cycles <5 % U_T (>95 % short-duration drop of U_T) within 5 s	<5 % U_T (>95 % short-duration drop of U_T) within 0.5 cycles 40 % U_T (60 % short-duration drop of U_T) within 5 cycles 70 % U_T (30 % short-duration drop of U_T) within 25 cycles <5 % U_T (>95 % short-duration drop of U_T) within 5 s	❖ Ensure that mains quality is suitable for a commercial or hospital environments. ❖ For permanent operation during a power failure, connect the bed to a power generator as the back-up battery's capacity is limited.
Magnetic field of network frequency (50/60 Hz) IEC 61000-4-8	3 A/m	3 A/m	❖ Ensure the magnetic fields of the network frequency conform to the normal levels of commercial or hospital environments.

NOTE *U_T refers to the AC mains voltage before the test level is applied.*

<table>
<tr><th>Resistance Test</th><th>Test Level as per IEC 60601</th><th>Level of Compliance</th><th>Electromagnetic Environment</th></tr>
<tr><td>Conducted high frequency phenomena
IEC 61000-4-6</td><td>3 Vrms
150 kHz to 80 MHz</td><td>3 Vrms</td><td rowspan="2">❖ It is recommended to use portable and mobile HF communication equipment around the bed in distances defined below:
Recommended distances:
d = 1.2 √P
d = 1.2 √P 80 MHz to 800 MHz
d = 2.3 √P 800 MHz to 2.5 GHz
P is the rated maximum output power of the transmitter in Watts (W) defined by the transmitter's manufacturer.
d is the recommended separating distance in metres (m).
❖ Ensure the field intensities of permanent HF transmitters determined by the summary of electromagnetic characteristics for the given place do not exceed the satisfactory level b in each frequency range.
Interferences are possible in the vicinity of the instrument marked with the following symbol:
  </td></tr>
<tr><td>Radiated high-frequency phenomena
IEC 61000-4-3</td><td>3 V/m
80 MHz to 2.5 GHz</td><td>3 V/m</td></tr>
<tr><td colspan="4">a It is not possible to accurately indicate field intensities from permanent transmitters (e.g. radio base stations of the radio, phones and ground mobile and amateur radio stations, AM and FM radio and television broadcasting). To assess the electromagnetic environment for permanent HF transmitters, take into account the on-site electromagnetic characteristics.
If the measured field intensity is higher than the pertinent satisfactory HF level stated above, observe whether the bed is functioning normally.
If any abnormal properties are observed, move or relocate the bed.
b The field intensity in the entire frequency range from 150 kHz to 80 MHz should be lower than 3 V/m.</td></tr>
</table>

NOTE *With 80 MHz and 800 MHz, the higher frequency range is applicable.*

NOTE *The absorption and reflection of buildings, objects and people will influence electromagnetic propagation.*

Recommended separation distances between portable and mobile RF communications equipment and the Multicare Medical Bed			
The Multicare Medical Bed is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the Multicare Medical Bed can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the Multicare Medical Bed as recommended below, according to the maximum output power of the communications equipment.			
Rated maximum output of transmitter W	**Separation distance according to frequency of transmitter** **m**		
	150 kHz to 80 MHz $d = [\frac{3,5}{V_1}]\sqrt{P}$	**80 MHz to 800 MHz** $d = [\frac{3,5}{E_1}]\sqrt{P}$	**800 MHz to 2,5 GHz** $d = [\frac{7}{E_1}]\sqrt{P}$
0,01	0,12	0,40	0,40
0,1	0,37	1,2	1,2
1	1,1	4	4
10	3,6	12	12
100	11	40	40
For transmitters rated at a maximum output power not listed above the recommended separation distance d in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer. NOTE 1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies. NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.			